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GOVERNMENT OF INDIA

MINISTRY OF RAILWAYS

(RAILWAY BOARD)

Report by the Railway Board ON INDIAN RAILWAYS FOR 1953-4

Volume I

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FOR

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PRINCIPAL STATISTICS OF RAILWAY OPERATIONS

I.—All Indian Railways

Items	1948-9	1949-50	1950-1	1951-2	1952-3	1953-4
Capital at charge (crores) Rs	775·88	813·07	838·18	861·57	*868·55	**878·45**
Route mileage as on 31 March	33,860·85	34,022·29	34,078·94	34,119·44	34,274·98	**34,405·58**
Gross earnings (crores) Rs	234·12	258·32	264·62	294·14	*272·28†	**272·81†**
Total Working expenses (crores) Rs	184·06	207·23	214·39	227·58	*219·99†	**231·99†**
Operating ratio (per cent)	78·62	80·17	81·02	77·37	*80·79	**85·04**
Number of passengers originating (millions)	1,184·51	1,255·26	1,307·79	1,232·10	*1,212·09	**1,220·40**
Passenger miles (millions)	38,817·19	40,019·72	41,671·74	39,550·77	*37,396·27	**37,548·57**
Earnings from carriage of passengers (crores) Rs	93·11	95·25	99·22	111·42	*101·83	**101·35**
Average earnings per passenger mile Pies	4·60	4·57	4·57	5·41	*5·23	**5·18**
Freight tons originating (millions)	82·67	91·58	92·34	97·87	*98·37	**99·36**
Freight ton miles (millions)	22,750·42	25,464·68	27,007·52	29,017·66	*28,961·46	**29,493·45**
Earnings from carriage of goods (crores) Rs	112·34	135·69	139·77	153·95	*143·81†	**145·39†**
Average earnings per freight ton mile Pies	9·48	10·2	9·94	10·2	11·2	**11·3**
Total train miles (millions)	167·55	179·42	185·11	191·50	*191·34	**194·81**
Gross earnings per train mile Rs	13·97	14·68	14·57	15·57	*14·23†	**14·00†**
Working expenses per train mile Rs	10·99	11·78	11·79	12·03	*11·50†	**11·91†**
Net earnings per train mile Rs	2·98	2·90	2·78	3·54	2·73†	**2·10†**
Net earnings per mean mile worked Rs	14,647	14,973	14,515	19,260	*15,208†	**11,870†**

*Revised figures.

† Exclusive of the freight charges on carriage of railway stores, fuel, etc., which do not enter into financial accounts with effect from 1 April 1952.

II.—Indian Government Railways†

Items	1948-9	1949-50	1950-1‡	1951-2	1952-3	1953-4
Capital at charge (crores) Rs	703·12	727·18	803·82	830·53	833·06	**843·33**
Route mileage as on 31 March	26,422·40	27,172·10	33,302·84	33,343·34	33,518·98	**33,852·15**
Gross earnings (crores) Rs	214·77	238·32	262·57	291·85	270·09§	**270·75§**
Total Working expenses (crores) Rs	169·63	192·89	212·67	225·76	218·16§	**230·18§**
Operating ratio (per cent)	78·98	80·94	81·00	77·36	80·77	**85·02**
Number of passengers originating (millions)	1,061·35	1,138·47	1,279·36	1,203·73	*1,185·66	**1,193·58**
Passenger miles (millions)	35,128·66	36,322·30	41,159·38	39,030·20	*36,928·32	**37,095·65**
Earnings from carriage of passengers (crores) Rs	83·91	86·04	97·83	109·88	100·38	**99·92**
Average earnings per passenger mile Pies	4·59	4·55	4·56	5·41	*5·22	**5·17**
Freight tons originating (millions)	74·42	83·44	91·38	96·66	97·12	**98·14**
Freight ton miles (millions)	21,639·83	24,207·86	26,962·51	28,965·87	28,905·78	**29,436·32**
Earnings from carriage of goods (crores) Rs	104·18	126·67	139·26	153·32	143·19§	**144·77§**
Average earnings per freight ton mile Pies	9·24	10·0	9·90	10·1	11·1	**11·3**
Total train miles (millions)	150·05	161·27	182·01	188·92	*188·54	**191·95**
Gross earnings per train mile Rs	14·31	14·78	14·67	15·67	*14·32§	**14·11§**
Working expenses per train mile Rs	11·30	11·96	11·86	12·11	*11·57§	**11.99§**
Net earnings per train mile Rs	3·01	2·82	2·80	3·56	2·75§	**2·11§**
Net earnings per mean mile worked Rs	16,933	16,618	14,748	19,562	*15,440§	**11,988**

*Revised figures.

† Include statistics of lines worked by Indian Government Railways but exclude Indian Government portions worked during 1948-9 and 1949-50 by the Nizam's State and Saurashtra Railways.

‡ Include figures for Bikaner State, Jodhpur, Mysore State, Nizam's State, Saurashtra, Jaipur State, Rajasthan, Dholpur State, Scindia State and Cutch State Railways, which have been taken over by the Central Government as a result of the Federal Financial Integration from 1 April 1950.

§ Exclusive of the freight charges on carriage of railway stores, fuel, etc., which do not enter into financial accounts with effect from 1 April 1952.

INTRODUCTORY NOTE

1. The Railway Board's annual report on Indian Railways is prepared for the financial year, *i.e.,* from 1 April of one year to 31 March of the year following.

Volume I is a narrative report dealing with the various aspects of railway working, such as, general administration, financial results, improvements in, and additions to, rolling-stock, commercial and operating methods, recruiting, training and welfare of staff, and facilities provided for the convenience of the travelling public.

Volume II contains financial and statistical summaries and statements covering the main heads of capital and revenue accounts and all other aspects of railway working.

2. Attention may be drawn again to the important change in accounting procedure introduced with effect from 1 April 1952 on Government Railways by the abandonment of the apportionment of through traffic earnings and elimination from financial accounts the inter-departmental and inter-railway adjustments on account of manufacture, repairs and overhaul of rolling-stock in workshops of one railway for another and of the freight charges on carriage of railway stores including fuel, by rail. Allowance should be made for these changes in comparing the statistics of gross earnings, working expenses and the derived statistics of Government Railways since 1 April 1952 with those for the preceding years. The earnings and expenses of individual railways are also affected by this change and the mode of presentation of the financial statistics has accordingly had to be changed in both volumes of this report with effect from 1 April 1952.

3. For statistical purposes, the Indian Railways are classified as follows with effect from 1 April 1952.

(i) Government Railways, and
(ii) Non-Government Railways.

The details of the railways falling under each category are shown in Appendix D of this volume.

4. For the information of those not conversant with the value of Indian currency and the units thereof, the following details are given:—

(*a*) One *lakh* equals one hundred thousand;
(*b*) One *crore* equals one hundred lakhs or ten millions;
(*c*) One *anna* equals 1/16th of a rupee;
(*d*) One *pie* equals 1/12th of an anna.

The approximate value in English coinage of a rupee at the present rate of exchange is one shilling and six pence.

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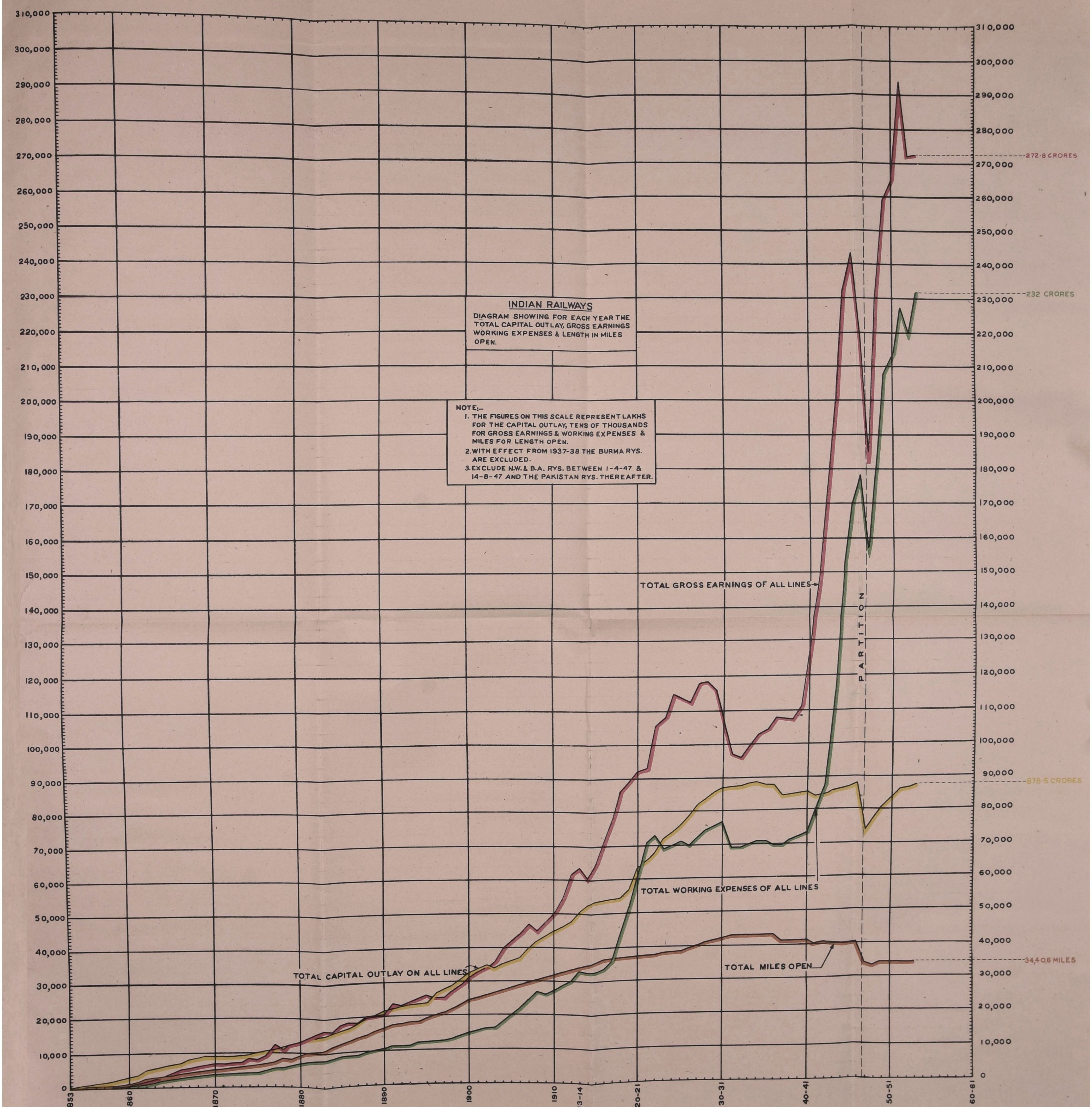

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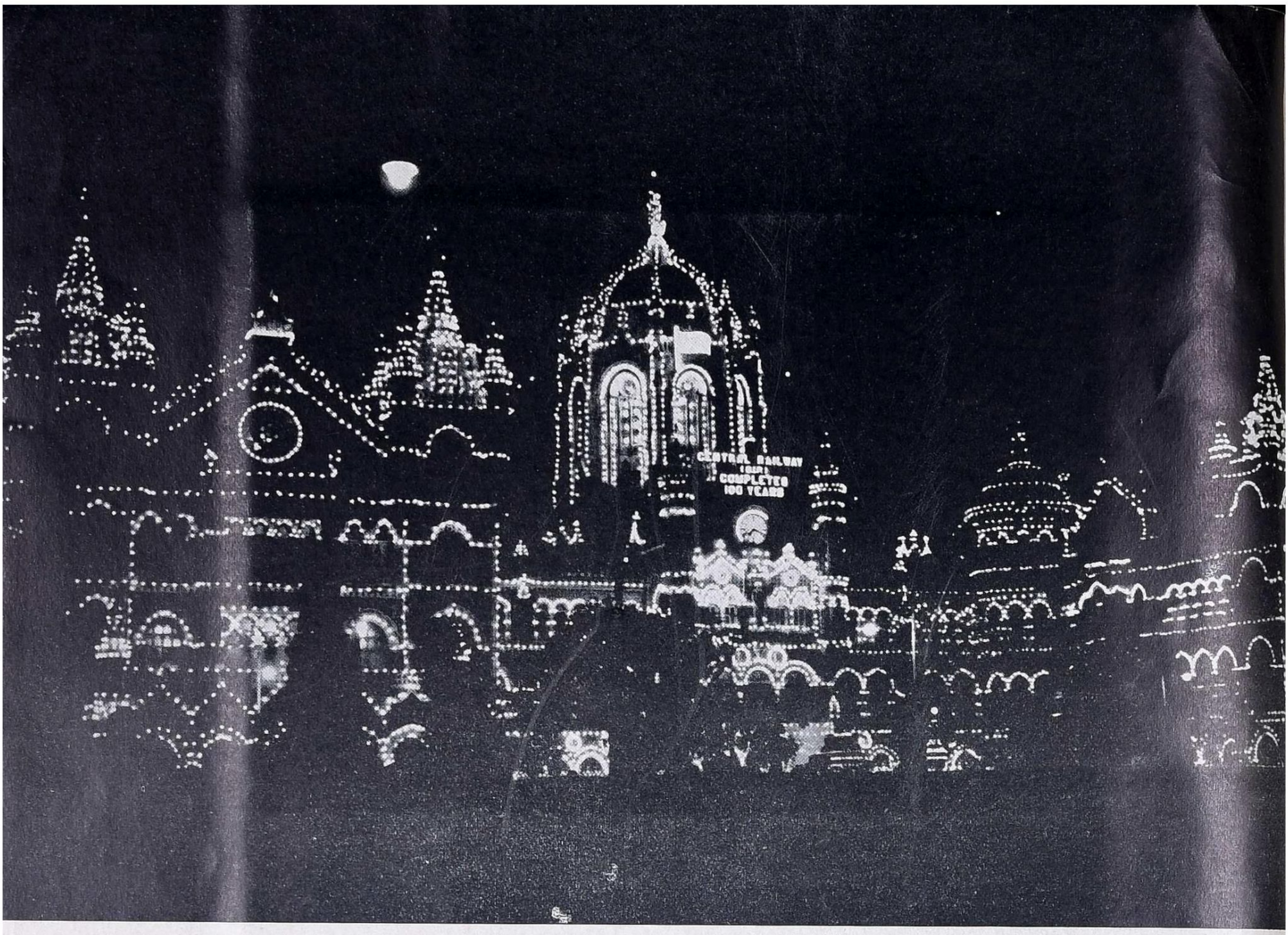
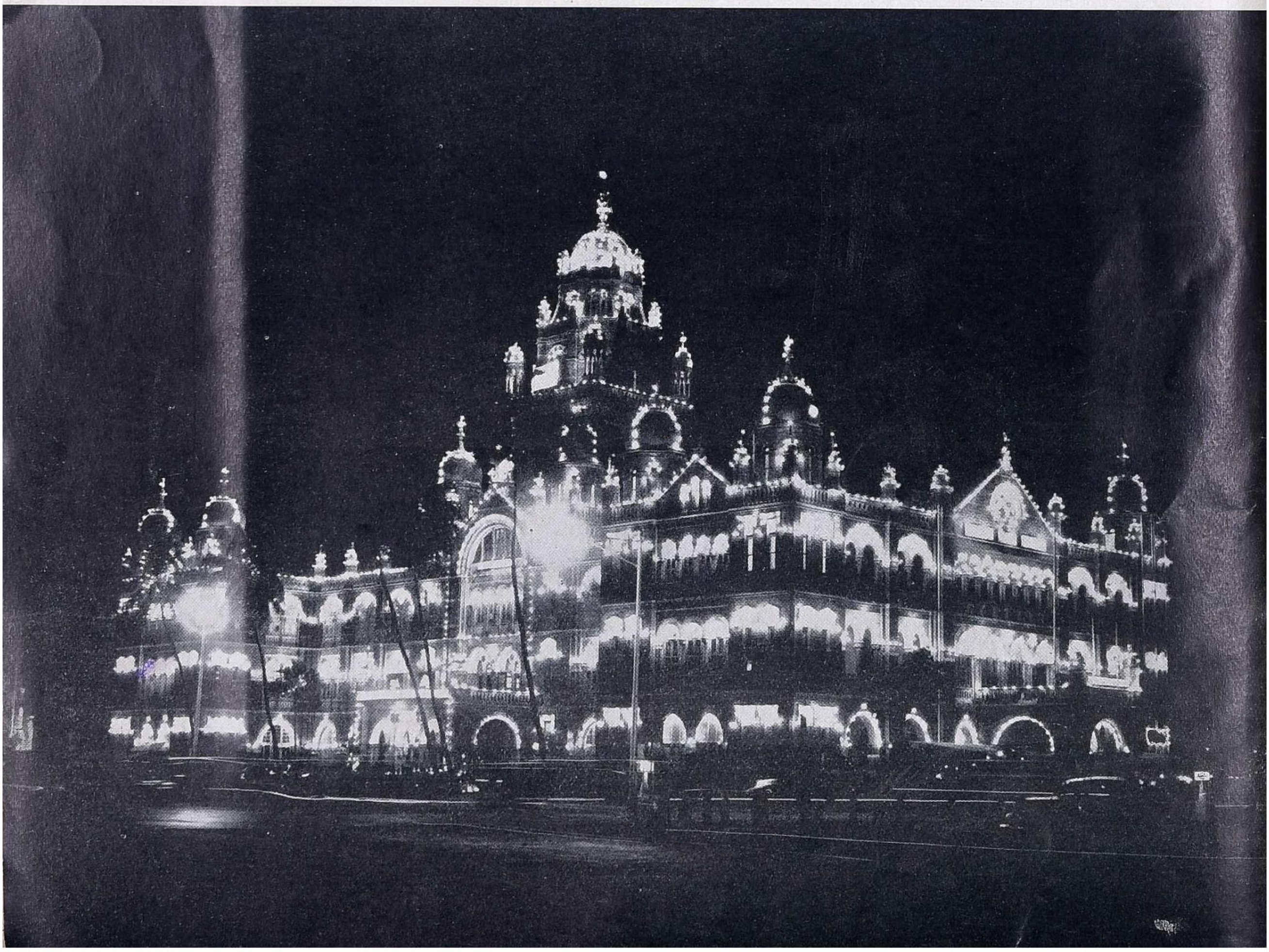


Above: CENTENARY ILLUMINATIONS OF THE VICTORIA TERMINUS ON 16 APRIL 1953

Below: WESTERN RAILWAY HEADQUARTERS ADMINISTRATIVE OFFICE BUILDINGS, CHURCHGATE (CENTENARY ILLUMINATIONS—16 & 17 APRIL 1953)



CHAPTER I

GENERAL

1. General features of the year.—Railway performance during 1953-4 maintained generally the same level of earnings as during the previous year. The most significant features of railway working were the overall increase in the volume of transportation produced and the reversal of the declining trends in passenger traffic which commenced in 1950-1.

The volume of traffic which determines the level of earnings, depends in turn on the general economic situation in the country. The economic conditions during the year were characterized by overall improvement. Increased confidence in the future of the country's economy was encouraged by Government's economic policy pursued under the Five Year Plan and the increased assistance rendered to the private sector. During the year there were substantial decreases in international trade. The value of both imports and exports recorded heavy decreases. The decrease in imports as compared with the last year was attributable largely to the reduction in food imports. The decrease in exports was comparatively less. The gains during the year have thus been due essentially to the developments in the domestic sphere. Assisted by a good monsoon, agriculture recorded a substantial increase in yield. There were increases in acreage as well as in yield under foodgrains. Despite a decrease in area, oilseeds recorded a large increase. A decrease, however, was recorded under sugarcane and jute. Industrial production during the year rose further, to a new record level, although the rate of increase was less than in the previous year. Levels of production higher than any touched since 1947 were reached under cotton cloth, cotton yarn, cement, electric motors, storage batteries, power transformers, ammonium sulphate, soda ash, paper and paper boards, bicycles and hurricane lanterns. There were, however, certain recessions as in the case of coal, iron and steel, aluminium and jute. The progressive increase in electrical energy generated during recent years was fully maintained in 1953-4. These increases in the field of domestic production have mainly been responsible for improving the level of railway freight traffic and earnings to a figure higher than in 1952-3. One of the gratifying features of the period under review was the maintenance of satisfactory labour-management relations in industrial undertakings. Although man-days lost in 1953 were slightly higher, the number of stoppages and the workers involved were fewer than in the previous year.

These factors in the general economic situation in the country are reflected in the earnings and performance of the Indian Railways. Freight tonnage and earnings have touched the highest figure since 1947-8. The decrease in the passenger traffic since 1950-1 appears to have been arrested during the year and both the number of passengers originating and passenger miles record a slight upturn. On the operational side, railways have continued their efforts to achieve greater efficiency and consequently enhanced capacity to handle additional traffic, resulting in the operation of increased train mileage. Although there have been setbacks under certain factors of operation, it is gratifying to note that past records since 1947-8 have been broken under freight tons originating, freight ton miles, train miles and freight earnings.

2. General review of working.—Gross earnings of all railways for the year 1953-4, including those in which Government of India have no financial interest, amounted to Rs. 272·81 crores as against Rs. 272·28 for the year 1952-3. The earnings from passengers carried registered a slight fall of Rs. 48 lakhs or 0·5 per cent, but this was more than offset by an increase of Rs. 1·58 crores in goods earnings from Rs. 143·81 crores in 1952-3 to Rs. 145·39 crores or 1·1 per cent in 1953-4.

The gross traffic receipts of Government railways amounted to Rs. 274·29 crores. After meeting all charges, including depreciation amounting to

Rs. 30·36* crores, but excluding interest charges, the net revenue on the results of working for the year amounted to Rs. 36·92 crores. In accordance with the terms of the Railway Convention, the amount of Rs. 34·36 crores representing the dividend at 4 per cent on the capital invested out of general revenues in the railway undertaking, excepting the strategic lines, was paid, leaving a balance of Rs. 2·56 crores which was allocated to Development Fund.

Certain important statistics relating to the traffic handled during 1953-4 as compared with 1952-3 for all railways are given below:

PRINCIPAL STATISTICS OF WORKING OF ALL RAILWAYS

Items		1952-3	1953-4	Percentage variations
Number of passengers originating	(in millions)	1,212·1†	**1,220·4**	+0·7
Passenger miles	(in millions)	37,396·3†	**37,548·6**	+0·4
Earnings from passengers	(in crores) Rs	101·83†	**101·35**	—0·5
Average amount earned per passenger per mile	(Pies)	5·23†	**5·18**	—1·0
Average miles a passenger was carried	(Miles)	30·9†	**30·8**	—0·3
Freight tons originating	(in millions)	98·4	**99·4**	+1·0
(*a*) Revenue-earning traffic	(in millions)	78·4	**76·8**	—2·1
(*b*) Non-revenue traffic	(in millions)	20·0	**22·6**	+13·0
Net ton miles	(in millions)	28,961	**29,493**	+1·8
(*a*) Revenue-earning traffic	(in millions)	24,665	**24,677**	+0·05
(*b*) Non-revenue traffic	(in millions)	4,296	**4,816**	+12·1
Earnings from revenue-earning tonnage	(in crores) Rs	143·81	**145·39**	+1·1
Average amount earned per revenue-earning ton per mile	(Pies)	11·2	**11·3**	+0·9
Average miles a ton of goods was carried	(Miles)	294·4	**296·8**	+0·8
(*a*) Revenue-earning traffic	(Miles)	314·7	**321·4**	+2·1
(*b*) Non-revenue traffic	(Miles)	214·9	**213·3**	—0·7

† Revised figures

The slight fall in passenger earnings, despite some increase in both the number of passengers carried and passenger miles, was wholly accounted for by the non-suburban traffic due mainly to the effect of the shift towards lower class travel and increased concessional traffic during the year 1953-4. The average amount earned per passenger per mile decreased from 5·23 pies in 1952-3 to 5·18 pies in 1953-4. The total volume of goods traffic handled inclusive of non-revenue traffic recorded increases both as to tonnage and to net ton mileage. Each ton was also carried on an average over a longer distance, *viz.*, 296·8 miles in 1953-4 against 294·4 miles in 1952-3. Despite a fall in the tonnage originating under revenue-earning traffic, goods earnings, however, increased by 1·1 per cent, due mainly to the longer lead of the revenue-earning traffic, *i.e.*, 321·4 miles in 1953-4 against 314·7 miles in 1952-3, and a change in the composition of the traffic.

The position is substantially the same on the Government Railways, where the number of passengers and passenger miles increased from 1,234 to 1,238 million and from 36,928 to 37,096 million respectively. The volume of passenger traffic expressed in terms of passenger miles recorded increases under Air-Conditioned, Second class and Third class only; First‡ and Inter classes showing decreases of 25·4 and 3·57 per cent respectively. The shift in passenger traffic towards lower class travel from upper classes continued to some extent during the year under report as well. This is reflected in the relative volume of traffic in Third class, Ordinary (*i.e.*, passengers travelling in other than Mail trains) which accounted for 73·3 per cent of the total passenger miles in 1953-4 against 71·8 per cent in 1952-3.

* 36 lakhs are chargeable to capital being depreciation on capital assets of Chittaranjan Locomotive Works as explained in Chapter II, para. 24.

‡ Reflects the effects of the progressive abolition of First class.

The total volume of goods traffic inclusive of the non-revenue traffic on Government Railways during the year stated in terms of net ton miles had shown an increase of 1·8 per cent over the preceding year. The main increase was, however, recorded in the non-revenue traffic; the ton miles of the revenue-earning traffic recording a nominal increase of 10 million only in a total of 24,620 million. An analysis of the movement during the year as compared with the previous year shows the composition of goods traffic as follows:

GOVERNMENT RAILWAYS—COMPOSITION OF GOODS TRAFFIC IN TERMS OF TON MILES

	1952-3	1953-4
Revenue-earning traffic	85·14	**83·64**
Coal for the public and non-Government railways	25·87	**24·14**
Grains	9·52	**9·47**
Oil seeds	2·03	**1·62**
Other commodities	47·72	**48·41**
Non-revenue traffic	14·86	**16·36**
Railway coal	13·02	**14·10**
Railway stores and materials	1·84	**2·26**

As compared with 1952-3, the composition of goods traffic showed decreases under all other commodity groups except 'other revenue-earning commodities' and the non-revenue traffic.

Turning to the operating aspect, the Government Railways during the year operated 3·41 million more train miles or 1·88 per cent more than the previous year.

The passenger train mileage increased by 4·12 per cent but the punctuality of passenger trains slightly deteriorated on both gauges, the percentages declined from 82·14 and 83·57 in 1952-3 to 81·63 and 81·62 in 1953-4 on the broad and metre gauges respectively; mainly due to the Kumbh *mela* traffic and earthquake in the Pandu Region of the North Eastern Railway.

The goods train mileage totalled 73·71 million, representing a decrease of 1·32 per cent over the previous year, but the average freight load hauled by each goods train increased by 12 tons on both the broad and metre gauges. The composite index of speeds and loads of goods trains, *viz.*, the net ton miles per goods train engine hour recorded an increase from 4,951 in 1952-3 to 4,965 in 1953-4 on the broad gauge and from 1,929 to 1,993 on the metre gauge.

The number of wagons loaded on the broad gauge during 1953-4 was 4,338,359 recording a decrease of 55,456 wagons or 1·26 per cent compared with the previous year. On the metre gauge the number loaded was 2,508,915 which was 116,937 wagons less or 4·45 per cent less than the previous year. The mileage performed daily on an average per wagon also recorded a decline from 41·1 in 1952-3 to 40·1 miles in 1953-4 on the broad gauge and from 31·4 to 28·4 on the metre gauge. As compared with 1952-3, the net ton miles per wagon day also recorded a similar decrease, from 444 to 440 on the broad gauge and 204 to 193 on the metre gauge.

The average number of engines in use daily during 1953-4 rose by 0·6 per cent on the broad gauge and 2·15 on the metre gauge as compared with 1952-3. The percentage of engines under or awaiting repairs remained the same as during the last year on the broad gauge, *viz.*, 18 per cent, but on the metre gauge it deteriorated from 17·0 to 18·5 per cent during 1953-4.

Net ton miles per locomotive day on the line and in use showed an increase on broad gauge against a decrease on metre gauge. Engine user in terms of engine miles per day per engine on line (*i.e.*, inclusive of the time under repairs, etc.) increased from 80 miles in 1952-3 to 83 miles in 1953-4 on the broad gauge but decreased to 74 miles in 1953-4 from 75 miles on the metre gauge.

3. **Five Year Plan.**—During the year under review, the progress of the implementation of the Five Year Plan in the railway sector proceeded on the lines envisaged. The attached table gives a brief picture of the targets of expenditure in the Plan and the performance in the first three years of the Plan.

DETAILS OF RAILWAY EXPENDITURE IN THE PLAN PERIOD.

(*In crores of rupees*)

Categories of expenditure and percentage of Plan allocation	Total	Percentage	1951-2 (1st year) (Actuals)	1952-3 (2nd year) (Actuals)	1953-4 (3rd year) (Actuals)	1954-5 (4th year) (Budget)	1955-6* (5th year) (Balance)
Rolling stock and machinery	207·77	52·0	34·36	33·23	40·01	56·17	44·00
Track & bridges	71·45	17·8	10·72	13·96	10·37	13·40	23·00
Other structural and engineering works, collieries and ports	44·73	11·2	6·84	7·34	9·19	14·36	7·00
Labour welfare, staff quarters and other welfare works	23·93	6·0	3·74	3·14	4·00	5·55	7·50
Restoration of dismantled lines and new lines including electrification of track and major bridges	35·54	8·9	7·26	3·71	3·98	6·09	14·50
Passenger amenities	14·62	3·6	2·45	2·34	2·48	2·85	4·50
Miscellaneous items	2·20	0·5	5·49	—3·54	—5·83	—3·42	9·50
TOTAL	400·24	100	70·86	60·18	64·20	95·00	110·00

* The figures shown against each category in this column are tentative.

4. **Efficiency Bureau.**—In accordance with the reference made by the Minister for Railways during his Budget Speech in February, 1954, an organization, known as the "Efficiency Bureau" was formed for undertaking investigations of specific problems of railway working in the field of operation, workshop out-turn, repairs and maintenance, office organization, etc. The function of the Bureau is to assist the Railway Board and the Minister in judging the economics of operation.

5. **Acquisition of private railways.**—In pursuance of Government's decision mentioned in paragraph 5 of the last report, the contract of the Barsi Light Railway was terminated on 31 December 1953. This narrow gauge line, 202·57 miles long, has been merged with the Central Railway with effect from 1 January 1954.

6. **Railways and the Legislature.**—The Railway Budget for 1954-5 was presented to both Houses of Parliament on 19 February 1954. The general discussion on the Budget took place on 23 to 25 February 1954 in the Council of States, and from 1 to 5 March in the House of the People. The discussion covered a variety of subjects. The more important of these related to:

(*a*) construction of new lines and restoration of dismantled lines ;

(*b*) self-sufficiency in the matter of rolling-stock by encouragement of production of domestic manufacture ;

(*c*) conditions of Third class travel and overcrowding in trains ;

(*d*) catering, vending contracts and licence fees ;

(*e*) disposal of claims for goods lost or damaged ;

(*f*) staff amenities, such as, residential accommodation, etc. ;

(*g*) Five Year Plan on Railways ;

(*h*) constitution of the Railway Board ;

(*i*) regrouping of Railways and operational efficiency;
(*j*) running of *Janata* Expresses;
(*k*) corruption on Railways ;
(*l*) accidents ;
(*m*) concessions in passenger fares ;
(*n*) increase in working expenses of railways ; and
(*o*) Railway Separation Convention.

Notice of 450 cut motions was received to discuss general policy. These covered a large ground, such as, the policy of the Railway Board with respect to the recognition of trade unions of railway workers, short supply of wagons for transporting coal from collieries, representations of the schedule castes and hill tribes on Railways, expenditure on Chittaranjan on foreign technicians, system of recruitment of casual labour on Railways, examination of the rates structure, work of special police establishment, delay in the implementation of the recommendations of the Pay Commission, etc., inadequate amenities to staff and workers in workshops, loco sheds, etc.

Seventy-five cut motions were moved but after discussion all were negatived.

Out of a total number of 10,665 questions asked in both the Houses of Parliament during 1953-4, 1,211 or 11 per cent related to the Ministry of Railways.

A wide range of topics, such as, construction of new lines, procurement of rolling-stock and locomotives, staff matters, railway accidents and passenger amenities formed the subject matter of discussion.

7. National Railway Users' Consultative Council.—In pursuance of the announcement made by the Minister for Railways in Parliament while presenting the Railway Budget for 1953-4, regarding the setting up of Railway Users' Consultative Committees to afford frequent opportunities for closer consultation between railway users and the Railway Administrations at different levels on matters relating to the services provided by Railways and improvement in the efficiency of such services, a National Railway Users' Consultative Council was formed at New Delhi consisting of representatives of the Parliament, Industries, such as coal, iron and steel, jute and cotton, the Federated Chambers of Commerce and Associated Chambers of Commerce, Agricultural interests, etc.

During the year under review the National Council held one meeting. Important policy questions regarding vending and catering, book-stall contracts, social guides, ticketless travelling and operating position on the railways were discussed and specific recommendations were made for the consideration of the Government.

8. Zonal and Regional/Divisional Railway Users' Consultative Committees.—Besides the National Railway Users' Consultative Council at the centre, a zonal Railway Users' Consultative Committee each was formed at the headquarters of the six regrouped Railways. Also, three Regional/Divisional Railway Users' Consultative Committees were formed on each railway.

The membership of the Zonal and Regional/Divisional Railway Users' Consultative Committees has been prescribed so as to be broad-based and to accord representation to the various categories of railway users, such as, local chambers of commerce, trades associations, passengers associations, etc.

During 1953-4 in all 87 meetings of the Zonal and Regional Railway Users' Consultative Committees were held.

On the formation of the Railway Users' Consultative bodies, the Passenger Amenities Committees on each railway, which were previously set up as sub-committees of the former Local Advisory Committees, were reconstituted. The Passenger Amenities Committee on each Railway is now a sub-committee of the Zonal Railway Users' Consultative Committee, and all passenger amenity works are considered in close collaboration with these committees.

9. Amenities for the public.—While the improvements effected in this respect, during the year, are detailed in Chapter VIII, some of the more important measures taken during the year are briefly mentioned here.

The number of passenger train miles increased from 107 million in 1952-3, to 111 million in 1953-4.

Reservation of third class seats for long distance passengers in compartments set aside for the purpose continued to be done as in the past.

Automatic printing and ticket issuing machines have been installed at 21 stations on the Bombay suburban section and the Harbour Branch lines to enable quicker issue of tickets. Such machines were also in use on Madras and Calcutta suburban sections.

Intensive drive and surprise checks were carried out to ensure that booking offices were opened in time and that passengers were not over-charged by the booking clerks. To facilitate this, booking facilities were improved by the opening of additional booking windows wherever required.

Adequate arrangements were made for the thorough washing, cleaning and disinfecting of carriages and lavatories at terminal and selected intermediate stations.

The question of supply of drinking water to passengers continued to be given the closest attention. For the summer, apart from the usual complement of watermen at the smaller stations, special arrangements were made in the shape of posting about 20 watermen at important stations on all main routes to supply water to passengers. Also, the arrangement of having travelling watermen on selected trains was further extended.

The number of stations where the facility of electrically-cooled water was provided rose to 115 during the year under review.

8,014 fans in Third class and 1,162 in Inter class compartments were fitted during the year.

An *ad hoc* committee of three senior Administrative Officers drawn from the various Indian Railways was appointed to study closely the travel conditions and passenger amenities on *ex*-Assam Railway portion of the North Eastern Railway and to make recommendations. The Committee's Report was received and the recommendations made therein were under examination at the close of the year.

The safety of passengers in trains, particularly. women, was given due attention.

Originally it was decided that each window should be provided with three horizontal bars, but as a result of a further examination and with a view to strengthening these devices, instructions were issued that the number of bars in each window should be increased from 3 to 4, and that the body side doors should be fitted with internal combined throw-over latches, at both the top and the bottom of the door leaf. These instructions were further amplified in October 1953 to the effect—

(*a*) that a 1″×1/8″ flat bar should be welded in the middle on the existing lavatory window bars ; and

(*b*) that the window bars assembly on the lavatory windows should be secured by means of 1/4″ dia. × 3″ long square mushroom head bolts, riveted over the nuts in position,

these improvements being carried out as and when coaches pass through the shops for periodical overhaul.

10. Staff.—Certain developments relating to staff during the year under review are mentioned below:

The outstanding recommendations of the Joint Advisory Committee were implemented by railways in all cases except in regard to six categories which necessitated further detailed investigation. With a view to bringing on as large a number of staff as possible to the prescribed scales and the liberalized leave rules, a further option to be exercised before the end of August 1953 was permitted to all Railway staff.

The relations between the Railway Administrations and Labour continued to be cordial during the year.

The Permanent Negotiating Machinery functioned satisfactorily during the period.

An *ad hoc* Tribunal consisting of Shri Sankar Saran, a retired Judge of the Allahabad High Court, was set up to examine certain issues raised by the Federation.

The Industrial Disputes (Amendment) Act, 1953, providing for payment of compensation to workmen in the event of their being laid off by their employer on their retrenchment was enacted in December 1953.

The Adjudicator's Award in respect of hours of work and periodic rest was implemented completely on all the *ex*-States Railway Sections except *ex*-Bikaner and *ex*-Jodhpur Railway Sections of the Northern Railway where it was in the course of implementation and the *ex*-Mysore State Railway Section of the Southern Railway in respect of loco running staff and out-door clerical staff.

Twenty-six promotions were made during the year from Class II and Class III services to superior Railway Services against existing vacancies.

During the year the Railways continued to maintain 32 training schools and the activities of the other schools and Medical Departments were carried on satisfactorily.

The number of canteens during the year increased from 101 to 107 and the employees served by them increased from about 109,000 to 111,000.

With a view to meeting promptly the requirements of the Railways for recruitment in the various categories of Class III services, the number of Railway Service Commissions was increased from two to four and accordingly two new Commissions were set up at Madras and Allahabad.

11. Hindi section.—A Hindi Section has been functioning in the Railway Board's Office since September, 1952. It deals mostly with Hindi correspondence and assists in Hindi and English translation of official documents and other papers. Railway terminology in Hindi is also being progressed in consultation with the Ministry of Education. Besides preparing a Hindi version of the Budget Speech, the section also prepared the Hindi version of the Budget Statement and the pamphlet 'Towards Better Conditions of Travel' for presentation to Members of Parliament this year.

12. Security measures on railways.—A senior retired Police Officer has been appointed in July 1953 as Security Adviser to the Railway Board to study the working of the Watch & Ward and suggest measures to improve the security organizations on railways to minimise pilferages and thefts of goods from railway premises and running trains. He submitted certain preliminary recommendations and these were under consideration.

Usual safety measures on the railways were continued during the year under review also.

13. Publicity and public relations.—The Indian Railways continued their usual publicity activities through posters, press notes, press conferences, etc., for keeping the public informed about the Railway's operational efficiency, improvements in services, provision of extra amenities for the passengers and other phases of railway working.

In fact, there has been a steadily growing emphasis on the undertaking of such publicity. The efforts were directed towards the public as well as railway staff.

For encouraging among the staff the habit of courteous behaviour towards public, a special 'courtesy week' was observed on all Railways when specially prepared literature was distributed and posters exhibited. Officers and Inspectors visited the stations frequently during the period and the Week was observed by all staff with interest and enthusiasm.

14. Complaints.—The Complaints organization for keeping watch on the prompt disposal of complaints from the public continued to function. During the year under review, 29,103 complaints were received and dealt with by Railway Administrations. The Railway Board's Office dealt with about 1,450 complaints. All complaints were investigated and in cases where they were substantiated suitable disciplinary action was taken against the staff concerned.

15. Floods and cyclones.—Considerable damage was done to railway property during the year as a result of heavy rains, floods and cyclones. Details of the damage caused by such natural causes are shown in paragraph 74 of Chapter IV of this Report.

16. Railway Rates Tribunal.—At the beginning of the year under review the Tribunal had on hand five complaints from the public pending final

hearing and disposal. Out of these five cases four have been disposed of. During the year four complaints and four miscellaneous applications were received. Out of the four complaints, one was allowed to be withdrawn ; all the four applications were disposed of. Thus at the end of the year there were four complaints pending disposal before the Tribunal. These related to—

(i) quotation of station-to-station rates for jute from certain stations in Cuttack area, Shalimar and Anakapalle to Guntur and reduction in classification for jute ;

(ii) grant of increased free time for loading and unloading in the Rohtas' siding over the Eastern Railway ;

(iii) quotation of station-to-station rates for gypsum from Badwasi to certain specified stations ;

(iv) increased freight rates charged over the Shahdara-Saharanpur Light Railway with effect from 1 October 1953.

Besides the formal cases, two applications containing specific grievances were also received. The parties concerned were advised that the Tribunal could take cognisance only of those representations that were presented in accordance with the prescribed Rules of Procedure and in accordance with the Railway Act.

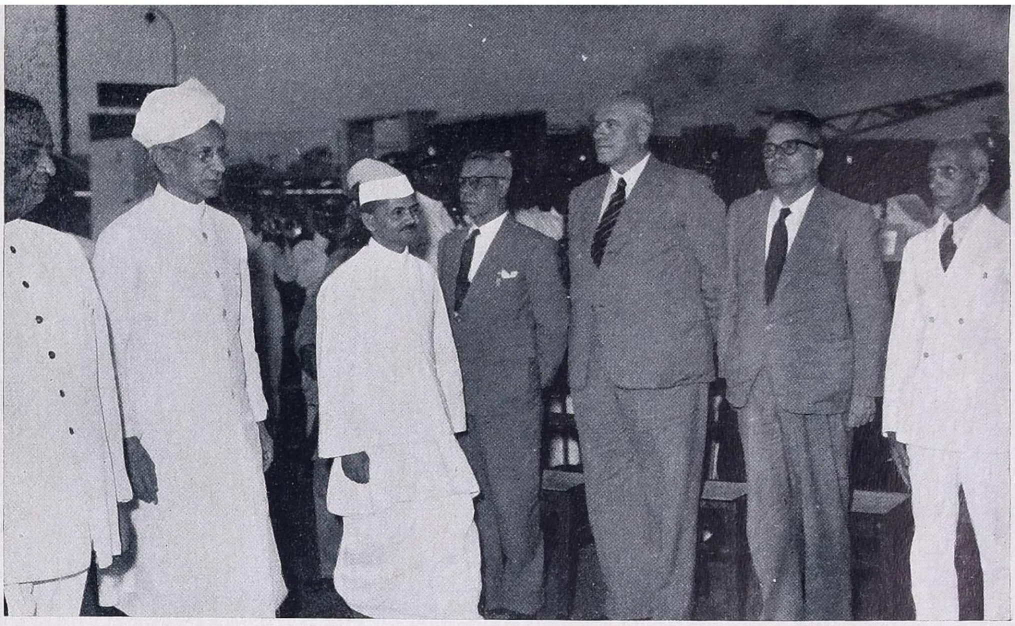
In accordance with the revised disciplinary procedure introduced with effect from 1 May 1952, a Class III railway employee including a skilled artisan, who has been dismissed or removed from service and whose appeal to the appropriate appellate authority has been disposed of, may, in certain specified cases, represent to the General Manager, for a revision of the penalty imposed on him and in this application, he may, if he so chooses, request his case being referred to the Railway Rates Tribunal for advice. On receipt of such a request, the General Manager, shall refer the case to the Tribunal for advice.

Two such references were received by the Tribunal from the General Manager, Central Railway, Bombay, during the year and the Tribunal tendered the necessary advice on them.

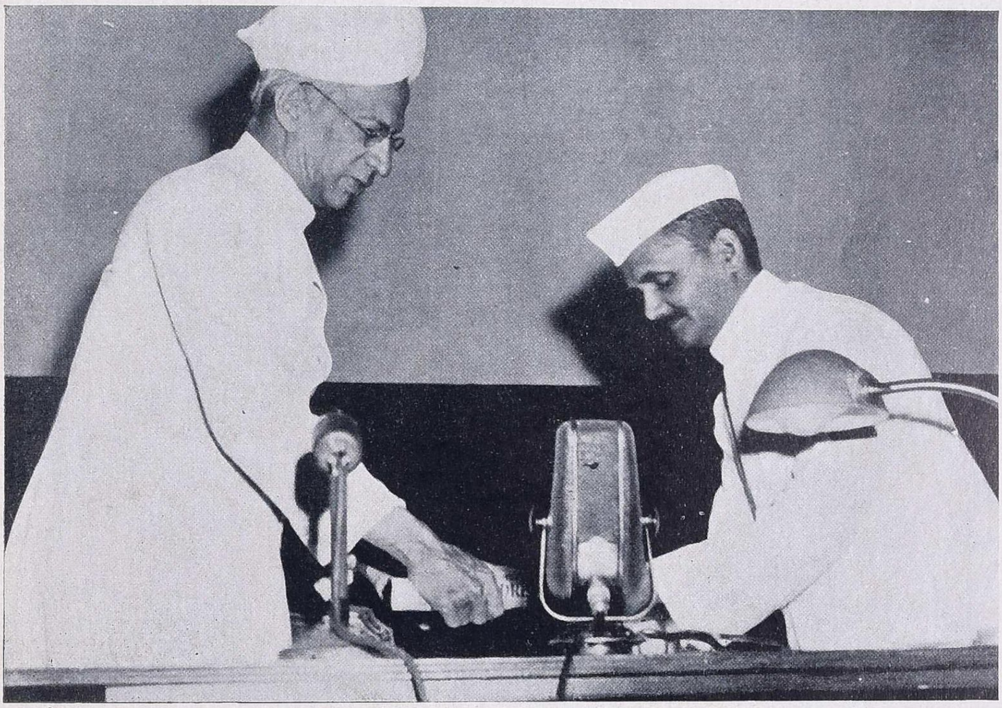
17. Implementation of decisions for division of rolling-stock between India and Pakistan.—A meeting of the Indo-Pakistan Stores Sub-Committee (Railway) was held at Karachi on 16-18 November 1953 to settle the points of disagreement and to decide other outstanding issues regarding the division and exchange of rolling-stock of the old B.A. and N.W. Railways. On a large number of items fresh decisions were taken, some items were treated as closed and some others were referred to the Balancing Committee (Eastern and Western sides) for further examination and report.

A programme for the transfer of assets belonging to the railways in one country but held up on the railways in the other, as per the division list, was also decided upon but the same has not yet been implemented. The matter would be reviewed further at the next meeting.

18. Centenary day celebrations.—During the year the Indian Railways celebrated their centenary. On 16 April 1853, the first railway train ran in India from Bombay to Thana. On 16 April 1953, a special train carried the Vice-President of India, Dr. Radhakrishnan, from New Delhi to the Centenary Exhibition Grounds, where a large and distinguished audience witnessed the celebrations. Railway employees of various grades who had the longest service to their credit were introduced to the Vice-President. The first copy of the Centenary Volume "Indian Railways—One Hundred Years" was presented to the Vice-President by the Minister for Railways & Transport. Speeches by Shri Lal Bahadur Shastri, Minister for Railways & Transport, Shri S. S. Vasist, Member (Transportation), Railway Board, Dr. Radhakrishnan and Shri O. V. Alagesan, Deputy Minister for Railways & Transport marked the occasion. A documentary film entitled 'The Centenary of Indian Railways' which was specially made by the Ministry of Information & Broadcasting was also shown and the celebrations ended by a display of fireworks.

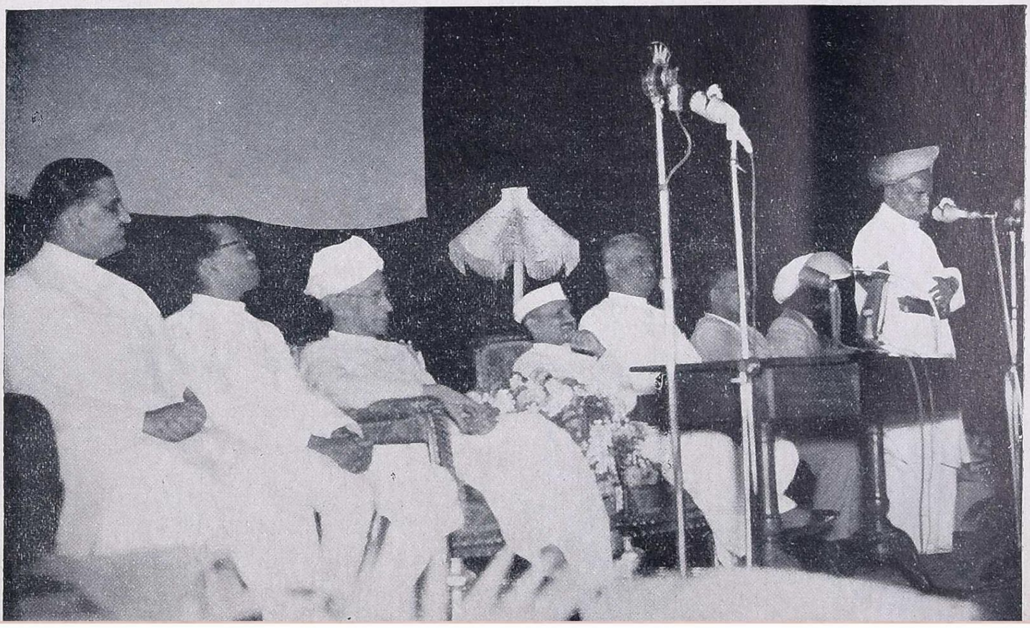


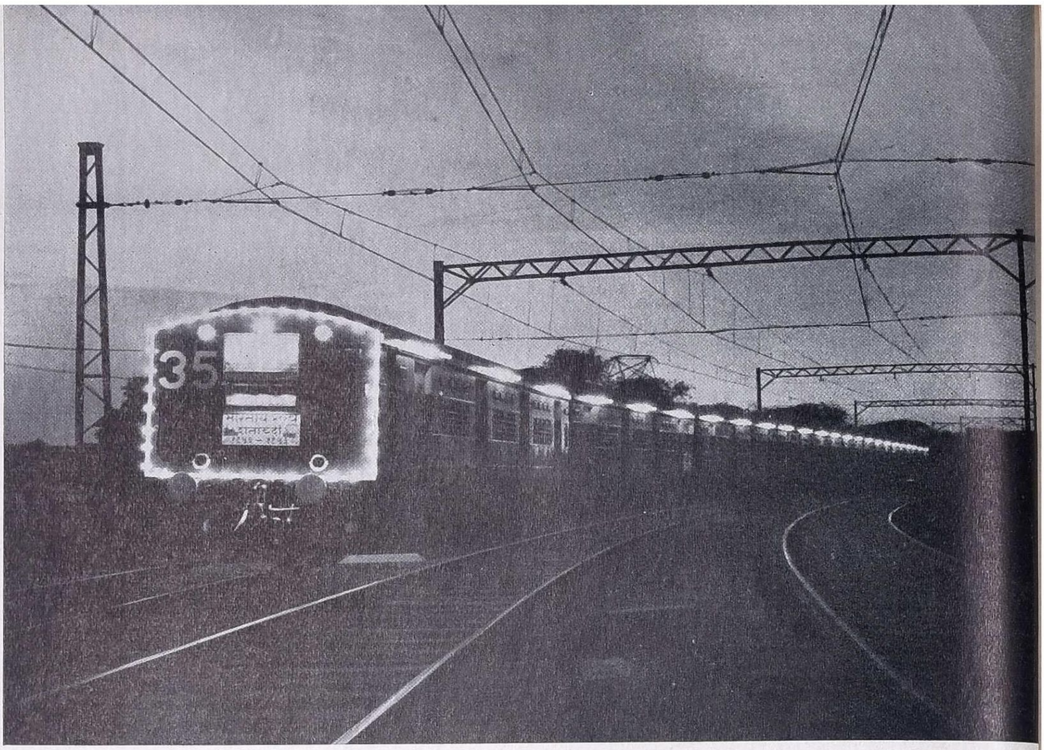
Right: THE VICE-PRESIDENT BEING CONDUCTED TO THE DAIS



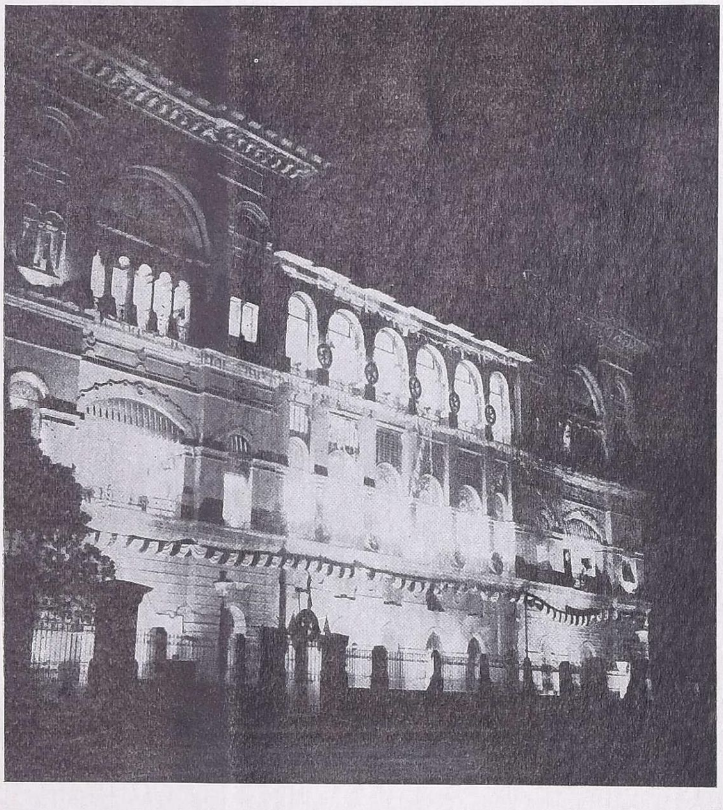
Left: SHRI LAL BAHADUR SHASTRI, MINISTER FOR TRANSPORT AND RAILWAYS PRESENTING THE COMMEMORATION VOLUME 'INDIAN RAILWAYS — ONE HUNDRED YEARS' TO DR. RADHAKRISHNAN, VICE-PRESIDENT

Below: SHRI DURGA MANOO OF THE CENTRAL RAILWAY, WHO HAS THE LONGEST SERVICE TO HIS CREDIT ON THE INDIAN RAILWAYS, NAMELY, 53 YEARS, SPEAKING AT THE FUNCTION HELD IN CONNECTION WITH THE INDIAN RAILWAYS CENTENARY CELEBRATIONS AT THE CENTENARY EXHIBITION GROUNDS IN NEW DELHI, ON 16 APRIL



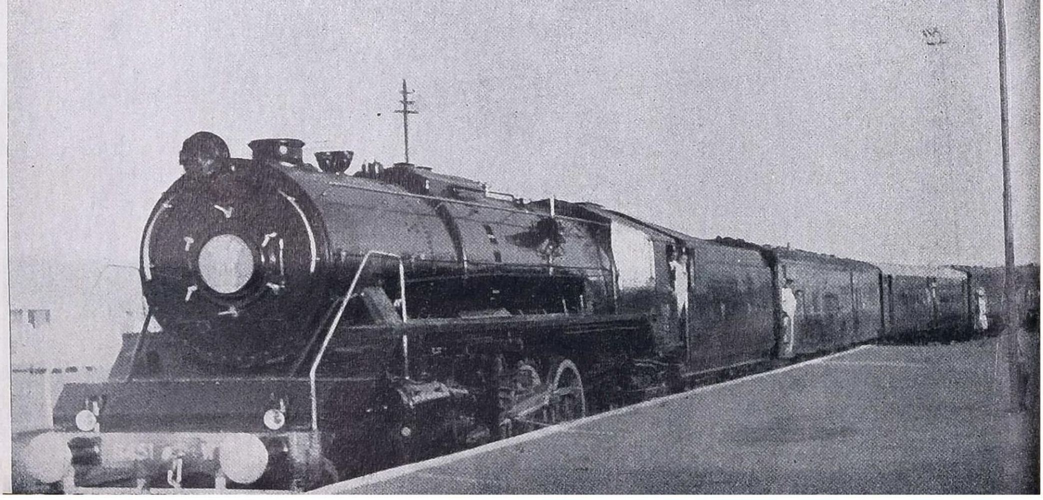


Above: ILLUMINATED WESTERN RAILWAY SUB URBAN ELECTRIC TRAIN ON 16 APRIL, 1953



Left: FAIRLIE PLACE, HEADQUARTERS BUILDING OF THE EASTERN RAILWAY, CALCUTTA, ON THE CENTENARY NIGHT

Below: THE SPECIAL TRAIN COMING INTO THE SPECIAL PLATFORM AT THE EXHIBITION. THE TRAIN WAS DRAWN BY THE LATEST ENGINE FROM THE CHITTARANJAN WORKSHOPS



At all Railway headquarters and railway divisional and district stations the Centenary Day was celebrated on an appropriate scale. The day was declared as a paid holiday to all staff, Railway buildings were illuminated and flags hoisted on them. At Bombay the celebration was particularly impressive. A local exhibition featured the progress made by the Indian Railways ; old and new locomotives and carriages were put on display at the Victoria Terminus.

19. ***Shatabdi*** **tickets.**—To mark the Centenary celebrations of the Indian Railways, " travel-as-you-like " tickets (called "*shatabdi*" tickets) for third class only at Rs. 30 per adult and Rs. 15 per child ticket, were issued over all the Indian Railways from 1 April 1953 to 16 April 1953 (both days inclusive) and again from 1 May 1953 to 16 May 1953 (both days inclusive), available for 14 days beginning from the midnight of the date of issue.

Holders of these tickets were entitled to travel within the prescribed period, from any station to any station over the particular railway which issued the tickets by all trains and as many times as they desired.

A total of 216,688 such tickets valued at Rs. 65,00,640 were issued under this arrangement.

20. Indian Railways Centenary Exhibition.—As mentioned in the last year's Report, the Indian Railways Centenary Exhibition at New Delhi which was opened on 7 March 1953 attracted a large number of visitors. Originally the Exhibition was scheduled to remain on show up to the end of April, 1953 but in response to insistent public demand, the Exhibition was kept open up to 17 May, 1953. During this period about a million people visited the Exhibition.

As the Exhibition was extremely popular, it was decided to put it on wheels and send it round the country. Accordingly two Centenary Exhibition Trains—one on the broad gauge and the other on the metre gauge were specially fitted out for the purpose of displaying the more interesting models and other exhibits. Fourteen display coaches were provided on each of the two trains. Eight coaches were fitted out by the Indian Railways and two contained models loaned by overseas Railways and manufacturers, leading industrialists in the country and other Ministries of the Government of India. The Planning Commission equipped four coaches on each of the Trains containing a number of models and charts showing the remaining development works being implemented in the First Five Year Plan period.

The trains were staffed with the requisite number of demonstrators and other officials. The itineraries of both the trains were drawn up in close consultation with the State Governments who were also invited to organize local exhibitions, to coincide with the visit of the trains, showing the Five Year Plan projects in their respective areas. Both the trains were equipped with loudspeaker arrangements and cinematograph installations.

The Prime Minister signalled departure of both the Centenary Exhibition Trains from Delhi Cantonment station on 10 July 1953. By the end of the year under review the two trains had completed their itineraries on the Central, Western, Northern and North-Eastern Railways and were due to visit the Eastern and Southern Railways. The visit of the two Exhibition Trains was popular and was in fact an unusual event in many parts of the country. The figures given below will be of interest.

(Up to 31 March 1954)

	Broad	Metre	Total
Number of Stations visited	64	78	142
Number of days the Trains were on show	223	198	421
Total number of visitors	959.885	625,832	1,585,717
Number of mileage covered	9,267	10,705	19,972

The trains are expected to complete their respective itineraries by the last quarter of 1954.

21. Loss of man-days as a result of strikes.—The total number of man-days lost as a result of strikes in workshops, running sheds and other similar establishments of the Indian Railways during 1953-4 was approximately

0·008 per cent of the total man-days worked as against 0·052 per cent during 1952-3, the position in this respect thus showing an improvement as compared with the previous year. There was a slight increase in the loss of man-days only on the Central Railway which was mainly due to staff having struck work as a protest against not granting holidays in connection with Budha Purnima and the demise of Shri Hari Harnath Shastri on 12 December 1953. The number of man-days worked during the years 1952-3 and 1953-4 totalled 117,782,234 and 121,455,771 respectively and the man-days lost owing to strikes to 61,608 and 9,270, respectively.

The details of the total number of man-days worked during 1952-3 and 1953-4 and the number of man-days lost by railways in consequence of strikes are summarised in the following table:—

NUMBER OF MAN-DAYS WORKED AND LOST THROUGH STRIKES DURING 1952-3 AND 1953-4

Railways	Year	Number of man-days worked	Number of man-days lost owing to strike	
			Legal	Illegal
C.L.W.	1952-3	1,826,210	—	890
	1953-4	1,837,124	—	151
Central	1952-3	14,209,026	—	7,022
	1953-4	15,197,206	8	7,664
Eastern	1952-3	49,141,441	—	13,654
	1953-4	48, 157,112	—	273
Northern	1952-3	17,589,045	—	15,621
	1953-4	18,699,042	—	—
North Eastern	1952-3	11,661,004	—	14,252
	1953-4	11,462,338	—	150
Southern	1952-3	13,210,322	—	7,454
	1953-4	14,219,272	—	1,021
Western	1952-3	10,145,186	—	2,715
	1953-4	11,883,677	—	3
TOTAL	1952-3	117,782,234	—	61,608
	1953-4	121,455,771	8	9,262

CHAPTER II

FINANCIAL RESULTS

A. AGRICULTURAL CONDITIONS AND FOREIGN TRADE DURING 1953-4

22. Monsoon conditions and agricultural situation in India during 1953-4.—With 70 per cent of total population directly dependent on agriculture and 80 per cent of the area under cultivation dependent entirely upon rainfall, monsoon conditions exercise a profound influence on the economic life of the country. The South-east monsoon, which account for about 75 per cent of the total rainfall affecting 60 per cent of the area under cultivation, though delayed, have been very favourable for agriculture in the country as compared with the last three seasons. On the Arabian sea the monsoon entered Travancore-Cochin about a week late, on 7 June 1953, and advanced into Malabar, south Kanara and south Konkan. From the Bay of Bengal, it entered eastern India by second week of June causing widespread thundershowers in Assam and West Bengal. The monsoon spread into the rest of the peninsula, north-west India and east U. P. by about middle of June. By the end of third week in June the monsoon had spread over the rest of the country and vigorous monsoon conditions prevailed in the Western, Central and North-eastern parts of India during the end of June, followed by a gradual weakening except over the north-east and the Konkan. The month of July witnessed heavy rainfalls successively over almost the whole country except in Orissa, Rajasthan, Gujarat, Saurashtra and Kutch where it was below normal. The monsoon continued to be fairly active over north India and in the Konkan throughout August. Very heavy rainfall was reported from South-east Madhya Pradesh causing floods over the Godavari delta, north Konkan, Gujarat and Saurashtra during September.

The post-monsoon period opened with good showers during the first fortnight of October over most part of the Peninsula, and central Orissa. Towards the end of October, Tamilnad and Travancore-Cochin had good rains. In December, the monsoon activity was generally weak except for two spells over Tamilnad and Travancore-Cochin and in the Punjab Hills.

Because of the favourable south-west monsoon, the *Kharif* season of 1953 was, on the whole, very satisfactory. Sowing and harvesting of *Kharif* crops were carried out under exceedingly favourable weather conditions, and such *Kharif* crops, as rice, bajra, maize and cotton gave record production. *Rabi* crops were sown under satisfactory conditions in the central and north and north-eastern parts of the country, and the same remark applies to the South regarding the sowing of paddy, millets, pulses and cotton during north-east monsoon.

The rainfall during the winter-monsoon period was in excess of the normal in northern and southern parts of the country. It was deficient or scanty in Gangetic West Bengal, Saurashtra, Mysore, Orissa, Chota Nagpur, Madhya Pradesh east, Hyderabad, Rayalaseema, Gujrat and Deccan Desh. There was no rain in Hyderabad.

In some areas, particularly, parts of Bombay, Madhya Pradesh, Hyderabad and U. P., sowings of *rabi* crops were delayed owing to lack of rains during the previous post-monsoon season. The standing crops in parts of Madhya Pradesh, U. P., Punjab, Pepsu, Rajasthan, Madhya Bharat and Delhi were affected by heavy and widespread rains accompanied by hailstorm in some areas, but the severe bright sun-shine that followed lateron proved beneficial and improved the crop conditions in these parts substantially.

There was a significant increase in the acreages under food crops attended with a still higher increase in production; that under rice reached the all-time record of 27·1 million tons. Acres under sugarcane were much less owing mainly to the low prices of *gur* obtaining at the sowing time. The overall outturn of oilseeds also exceeded that of the preceding year in spite of reduced

acreage, owing mainly to an excellent groundnut crop. Tobacco production increased despite a fall in acreage, while jute registered a very sharp decline in acreage owing to low jute prices during sowing period though the production was better relative to acreage. Except in the case of wheat and some oilseeds there was noticed a higher rate of yield per acre under cultivation.

The percentage variations as compared with previous year, in area and production of principal crops, according to the latest available information for 1953-4 are indicated below :—

VARIATION IN ACREAGE AND YIELD OF PRINCIPAL CROPS IN 1953-4

(*Percentage increase or decrease over 1952-3*)

Crop	Acreage Per cent	Yield Per cent
Rice	3·3	20·4
Wheat	7·4	5·6
Millets, maize and barley	2·8	10·6
Gram and other pulses	4·0	9·9
Sugarcane	−15·8	−8·1
Sesamum	4·6	15·4
Groundnut	−4·2	30·8
Rape and mustard	3·3	−1·3
Linseed	−0·8	−1·1
Castorseed	0·8	0·9
Cotton	8·5	25·7
Jute	−34·2	−10·4
Tobacco	−0·6	6·2

23. **Trade review.**—The foreign sea and air-borne trade of India declined in the year 1953-4 as compared with the preceding year. This decline is attributable to a fall in the value of imports and exports as well as re-exports. Imports fell more sharply than exports and re-exports.

Value of imports by sea and air.—The total recorded value of imports of foreign merchandise fell by Rs. 93 crores or about 15 per cent from Rs. 635 crores in 1952-3 to Rs. 542 crores in the year under review. This decline was due more to the fall in the prices of imported goods in general than reduction in volume of trade. The decreased import was attributable mainly to reduction in import of foodgrains, *viz.*, rice, wheat and milo contributing Rs. 91 crores, while raw cotton, textile machinery lubricating oils and vehicles contributed to a further fall of Rs. 43 crores. These were partially offset by increased value of imports under some other commodities, notably coal-tar dyes, motor spirit, kerosene and fuel oil, artificial silk yarn, iron and steel tubes, pipes and fittings and provisions and oilman's stores—between them causing an increase of Rs. 32 crores.

Value of exports by sea and air.—The total recorded value of exports declined by Rs. 38 crores or about 7 per cent from Rs. 554 crores in 1952-3 to Rs. 516 crores in the year under review. The decline is due almost entirely to reduction in prices. The items mainly responsible for the decrease are the following.

The reduction is noticed mostly in the case of gunny bags, as against gunny cloth the value of exports of which increased, vegetable oils, cotton, sugar, scrap iron and steel and coal—these accounting for Rs. 63 crores as reduction. Increases were, however, noticed under certain items, the major one being tea (Rs. 21 crores) while others like gunny cloth, hides and skins, iron and manganese ore contributed between them Rs. 15 crores of the increase.

Re-exports.—The total recorded value of re-exports including transit trade of countries on the Indian border except Pakistan declined by about Rs. 1 crore or by nearly 16 per cent from Rs. 6 crores in 1952-3 to Rs. 5 crores in the year under review. Variations of the re-export trade in 1953-4 as compared with 1952-3 were noticed mainly under jute manufactures, scrap iron and steel and vehicles.

B. FINANCIAL RESULTS OF INDIAN RAILWAYS (INCLUDING WORKED LINES)

24. Financial results of working.—The gross traffic receipts of Indian Railways including the worked lines, for the year 1953-4 amounted to Rs. 274·29 crores as compared with Rs. 270·56 crores in 1952-3, representing an increase of Rs. 3·73 crores.

The ordinary working expenses for the year amounted to Rs. 201·47 crores as against Rs. 187·96 crores in 1952-3, involving an increase of Rs. 13·51 crores. The contribution to the Depreciation Reserve Fund was Rs. 30·36 crores against Rs. 30·33 crores during 1952-3. Of this amount, the sum of Rs. 30 crores is on account of the Indian Railways capital assets chargeable to their working expenses, while the balance of Rs. 36 lakhs is on account of capital assets of Chittaranjan Locomotive Works by debit to manufacture suspense account. The additional contribution of Rs. 36 lakhs as a charge against capital was necessitated in the interests of accurate costing on commercial principles, and this represents the depreciation charges accruing on account of plant and machinery, etc., at Chittaranjan Locomotive Works as an item of cost of the different jobs undertaken. Payments to worked lines as their share of net earnings amounted to Rs. 28 lakhs as against Rs. 21 lakhs in 1952-3. The operating ratio, that is, the ratio of working expenses (excluding suspense, but including appropriation to Depreciation Reserve Fund) to gross earnings, was 85·06 per cent against 80·80 per cent in 1952-3.

The net result of miscellaneous transactions during the year was *minus* Rs. 5·62 crores against *minus* Rs. 5·21 crores in 1952-3.

The net revenue for the year was Rs. 36·92 crores as against Rs. 47·18 crores in the previous year.

The dividend paid to General Revenues during the year was Rs. 34·36 crores as against Rs. 33·99 crores in 1952-3.

The surplus for the year amounted to Rs. 2·56 crores against Rs. 13·19 crores in 1952-3, registering a decrease of Rs. 10·63 crores. This was allocated to the Development Fund.

The interest on the Depreciation Fund balances, credited to the fund during the year under review, amounted to Rs. 3·61 crores. The amount withdrawn during the year for renewals was Rs. 38·02 crores against Rs. 40·89 crores in 1952-3 and the net charge against the fund in 1953-4 was Rs. 4·05 crores against Rs. 6·47 crores in 1952-3. The balance in the Depreciation Reserve Fund at the end of the year, including the provisional balance as on 31 March 1950 of Rs. 8·93 crores of the *ex*-States' Railways, was Rs. 1,12·79 crores as against Rs. 1,16·36 crores at the end of 1952-3.

The works expenditure during the year amounted to Rs. 64·06 crores as against Rs. 60·09 crores in 1952-3. Of this, an amount of Rs. 11·85 crores was charged to Capital, Rs. 38·02 crores to the Depreciation Reserve Fund, Rs. 9·81 crores to Development Fund and Rs. 4·38 crores to Revenue (Open Line Works Revenue).

25. Traffic receipts.—The total traffic receipts of the Indian Railways, excluding the worked lines, amounted to Rs. 2,73·42 crores. The details are given in the sub-joined statement.

EARNINGS AND NET TRAFFIC RECEIPTS OF INDIAN RAILWAYS

(In crores of rupees)

	1951-2	1952-3	**1953-4**
Passenger earnings	1,09·88	1,00·38	**1,00·00**
Other coaching earnings	19·87	18·17	**18·01**
Goods earnings	1,56·79	1,46·12	**1,47·18**
Sundry earnings	5·05	5·12	**5·17**
Suspense	−0·77	0·77	**3·93**
TOTAL	2,90·82	2,70·56	**2,74·29**
Less earnings of worked lines	1·08	0·89	**0·87**
Net traffic receipts	2,89·74	2,69·67	**2,73·42**

The gross traffic receipts for 1951-2 of Rs. 2,90·82 crores are inclusive of Rs. 16·31 crores on account of the earnings from the carriage of railway stores and fuel which are treated as free hauled traffic from 1 April 1952. If the element of freight on railway stores and fuel had been excluded from the traffic receipts for 1951-2 the comparable figure for that year would amount to Rs. 2,74·51 crores.

The increase under gross receipts during 1953-4 as compared with the last year is mainly under suspense, *viz.*, Rs. 3·16 crores. Goods earnings for 1953-4 also recorded an increase of Rs. 1·06 crores as compared with the previous year.

26. Working expenses.—A comparison of ordinary working expenses (excluding suspense) under the various demand heads for the year 1953-4 with those for 1952-3 is given in the following statement.

ANALYSIS OF WORKING EXPENSES, INDIAN RAILWAYS

(In crores of rupees)

Demand Heads	1952-3	1953-4	Increase(+) Decrease(−) over 1952-3
Administration	26·18	**27·88**	+ 1·70
Repairs and maintenance	64·21	**68·08**	+ 3·87
Operating staff	41·16	**43·40**	+ 2·24
Operation (Fuel)	22·20	**23·98**	+ 1·78
Operation other than staff and fuel	13·48	**13·96**	+ 0·48
Miscellaneous expenses	17·12	**18·64**	+ 1·52
Labour welfare	3·64	**4·03**	+ 0·39
TOTAL	1,87·99	**1,99·97**	+11·98

The increase during 1953-4 is mainly due to increase in cost of staff appointed in connection with the implementation of Adjudicator's award, etc., annual increments, more payments of compensatory and house rent allowance as a result of treatment of part of dearness allowance as dearness pay, Kumbh *mela* at Prayag, overtaking of arrears of repairs and maintenance of railway assets and installations and diversion of loco coal by sea to enable movement of more public coal and other merchandise by rail to help industries and other public requirements.

An analysis of the financial results of working of the Indian Government Railways showing the capita-at-charge, gross receipts, working expenses, net revenue receipts and dividend, etc., for the last three years is given in the following statement:

FINANCIAL RESULTS OF WORKING OF INDIAN GOVERNMENT RAILWAYS

(Figures in thousands of rupees)

	1951-2	1952-3	1953-4
Capital at charge	8,50,11,11	8,57,37,82	**8,69,29,94**
Deduct amount of capital contributed by companies	83,47	83,47	**83,47**
Net Government capital at charge	8,49,27,64	8,56,54,35	**8,68,46,47**
Gross receipts	2,90,81,71	2,70,55,97	**2,74,29,27**
Working expenses including suspense and depreciation reserve Fund.	2,24,03,73	2,17,95,88	**2,31,47,21**
Payment to worked lines	31,38	21,29	**28,03**
Net traffic receipts	66,46,60	52,38,80	**42,54,03**
Net miscellaneous expenditure	4,71,97	5,20,56	**5,62,55**
Net revenue receipts	61,74,63	47,18,24	**36,91,48**
Percentage of net revenue receipts on capital at charge	7·26	5·50	**4·25**
Charges against net revenue *receipts*			
Dividend to general revenues	33,40,56	33,99,47	**34,35,77**
Net Gain or Loss to Government—			
Gain	28,34,07	13,18,77	**2,55,71**
Loss	—	—	—

NOTE 1.—The figures of Capital-at-charge are provisional pending closing of pre-partition accounts, and the finalization of the balances of the *ex*-States' Railways brought forward on 1 April, 1950.

NOTE 2.—The figures of gross receipts and working expenses for 1951-2 are inclusive of the freight charges on the carriage of railway stores and fuel which are treated as free-hauled traffic from 1 April, 1952 and are consequently excluded from the figures for the subsequent years.

27. Gain or loss.—The net results of working stated in terms of gain and loss for the three years are given in the following statement:

GAIN OR LOSS IN WORKING, INDIAN GOVERNMENT RAILWAYS

(In lakhs of rupees)

	1951-2	1952-3	1953-4
Gain	28,34	13,19	2,56
Loss	—	—	—

28. Development Fund.—During the year, the Fund received a credit of Rs. 3·29 crores including interest, while Rs. 9·81 crores were withdrawn from it for meeting expenditure chargeable thereto, giving a net debit of Rs. 6·52 crores to the Fund. The closing balance at credit of the Fund on 31 March, 1954 was Rs. 20·62 crores.

C. GENERAL RESULTS OF WORKING OF ALL INDIAN RAILWAYS

29. Analysis of earnings.—The total earnings of all railways for the year 1953-4 including those in which the Government of India have no financial interest amounted to Rs. 2,72·81 crores of which goods traffic accounted for Rs. 1,45·39 crores or 53·29 per cent, passenger traffic for Rs. 1,01·35 crores or 37·15 per cent. and parcels, luggage and other miscellaneous sources of revenue for Rs. 26·07 crores or 9·56 per cent.

30. Traffic and mileage.—The more important figures of traffic on all Indian Railways for the year 1951-2 to 1953-4 are summarized in the table below. Both the passenger and goods traffic handled during the year have recorded increases and thus the continued fall in passenger traffic noticeable since 1951-2 appear to have been checked during the year under report.

STATISTICS OF TRAFFIC OF ALL INDIAN RAILWAYS

	Year	Govt. Railways	Non-Govt. Railways	Total all Railways
Total route mileage	1951-2	33,343·34	776·10	34,119·44
	1952-3	33,518·98	756·00	34,274·98
	1953-4	**33,852·15**	**553·43**	**34,405·58**
Passengers originating (in millions)	1951-2	1,204	28	1,232
	1952-3*	1,186	26	1,212
	1953-4	**1,193**	**27**	**1,220**
Passenger miles (in millions)	1951-2	39,030	521	39,551
	1952-3*	36,928	468	37,396
	1953-4	**37,096**	**453**	**37,549**
Tons originating (in millions)	1951-2	97	1	98
	1952-3	97	1	98
	1953-4	**98**	**1**	**99**
Net ton miles (in millions)	1951-2	28,966	52	29,018
	1952-3	28,906	55	28,961
	1953-4	**29,436**	**57**	**29,493**

* Revised figures

31. Passenger earnings.—As compared with 1952-3 passenger earnings on all Indian Railways, however, decreased by Rs. 48 lakhs or 0·47 per cent only as against an increase of about 8 millions or 0·67 per cent in the number of passengers originating and about 153 millions or 0·41 per cent in passenger miles. The slight fall in passenger earnings is wholly accounted for by the non-suburban traffic due mainly to the effect of the concessional traffic during the year and a shift towards lower class travel.

The earnings by classes of all Indian Railways from passenger traffic for the three years 1951-2 to 1953-4 are summarized in the table below:

PASSENGER EARNINGS BY CLASSES—ALL INDIAN RAILWAYS

(Figures in lakhs of rupees)

Class	1951-2	1952-3*	1953-4
Air-conditioned	19	27	**47**
First	2,25	1,99†	**1,27†**
Second	4,57	4,13	**4,47**
Inter	6,68	5,77	**5,53**
Third	97,73	89,67	**89,61**
TOTAL	1,11,42	1,01,83	**1,01,35**

* Revised figures
† Reflects the effect of the policy of gradual withdrawal of first class accommodation.

The fall in earnings had occurred in the classes other than Air-conditioned and Second which recorded increases of 75·7 and 8·15 per cent respectively over the previous year. The First, Inter and Third classes recorded decreases of 36·2, 4·10 and 0·06 per cent respectively. The passenger miles, however, recorded drop under First and Inter Classes only of 25·4 and 3·63 per cent respectively; the Air-conditioned, Second and Third showing increases of 76·0, 6·34 and 0·60 per cent respectively as compared with the previous year. The drop in the First class is due to the policy of gradual withdrawal of this type of accommodation on the Indian Railways; reference to which is made in greater detail in Chapter III of this report.

The number of passengers originating and the passenger miles by classes for the three years 1951-2, 1952-3 and 1953-4 are stated below:

VOLUME OF PASSENGER TRAFFIC BY CLASSES—ALL INDIAN RAILWAYS

(Figures in millions)

Class	No. of passengers originating.			Passenger miles.		
	1951-2	1952-3*	**1953-4**	1951-2	1952-3*	**1953-4**
Air-conditioned	0·017	0·031	**0·049**	12	17	**31**
First	14·1	13·8†	**12·8†**	263	250†	**187†**
Second	5·0	4·8	**4·3**	572	522	**555**
Inter	21·4	19·9	**18·5**	1,359	1,218	**1,174**
Third	1,191·6	1,173·5	**1,184·8**	37,345	35,389	**35,602**
TOTAL	1,232·1	1,212·0	**1,220·4**	39,551	37,396	**37,549**

* Revised figures
† Reflects the effect of the policy of gradual withdrawal of first class accommodation

Detailed figures of number of passengers originating, passenger miles and earnings are given in Summary X and Statements 12 and 36 of Volume II of this report.

32. **Goods earnings.**—During the year 1953-4 the earnings from goods carried amounted to Rs. 145·39 crores as against Rs. 143·81 crores in 1952-3, thus registering an increase of Rs. 1·58 crores or 1·10 per cent as compared with 1952-3.

The total tonnage of goods originating, both revenue-earning and non-revenue traffic increased by about a million or by 1·01 per cent but as each ton of freight was carried on an average over a distance of 296·8 miles as compared with 294·4 miles during 1952-3, the total ton miles increased by 532 millions or 1·85 per cent only. The revenue earning-tonnage originating during 1953-4, however, registered a drop of 1·60 millions in comparison with 1952-3 but as each ton was carried a distance of 321·4 miles as against 314·7 miles during 1952-3, about 12 millions more ton miles of the revenue-earning traffic were actually hauled during the year. The increase in goods earnings has been brought about mainly by a change in the composition of traffic and by longer lead of the traffic.

The ton miles for the different commodity groups and the tonnage originating according to the different classes of commodities on the Government Railways during the years 1952-3 and 1953-4 are summarized below:

VOLUME OF GOODS TRAFFIC—GOVERNMENT RAILWAYS

	Ton miles 1952-3	(in millions) **1953-4**
A. Revenue earning traffic—		
Coal	7,477	**7,105**
Grains	2,751	**2,787**
Oil seeds	588	**477**
Other commodities	13,794	**14,251**
Total revenue-earning traffic	24,610	**24,620**
B. Non-revenue traffic—		
Railway coal and materials	4,296	**4,816**
Total—Revenue-earning and non-revenue traffic	28,906	**29,436**

VOLUME OF GOODS TRAFFIC—GOVERNMENT RAILWAYS—*contd.*

	Tons originating (in millions of tons)	
	1952-3	1953-4
A—Revenue-earning traffic—		
I Products of agriculture—	15·35	**14·04**
(*a*) Foodgrains	8·34	**8·31**
(*b*) Others	7·01	**5·73**
II Products of animals	0·34	**0·33**
III Products of mines—	35·26	**35·41**
(*a*) Coal for public and non-Government Rlys.	22·33	**20·62**
(*b*) Others (including mineral oils)	12·93	**14·79**
IV Products of forests	3·20	**3·27**
V Manufactures	10·22	**10·73**
VI Miscellaneous (including military traffic)	12·76	**11·77**
Total revenue-earning traffic	77·13	**75·55**
B—Non-revenue traffic (Railway coal and materials)	19·99	**22·59**
Total—Revenue-earning and non-revenue traffic	97·12	**98·14**

It will be of interest to note that tonnage originating of the non-revenue traffic accounted for 23·0 per cent of the total tonnage during 1953-4 and 20·6 per cent during 1952-3. The average distance travelled by the Railway stores and materials other than coal is, however, much less than the public traffic. So the transport capacity actually absorbed by the Railways for their own domestic requirements in terms of ton miles represented 16·4 per cent in 1953-4 and 14·9 per cent in 1952-3; out of which Railway Stores other than coal accounted for only 2·26 per cent and 1·84 per cent in the respective years.

Statement below gives details of earnings from principal commodities carried by Government Railways during 1952-3 and 1953-4. It may be seen from the statement that excepting grams and pulses, wheat, oil-seeds, cotton raw and manufactured, fresh fruits and vegetables, coal, coke and patent fuel, wood unwrought, vegetable oil and other edible oils and jute raw and manufactured, there have been in respect of other commodities more receipts from traffic carried during 1953-4 than during 1952-3:

RECEIPTS FROM DIFFERENT COMMODITIES (GOVERNMENT RAILWAYS)

	(In lakhs of rupees)	
	1952-3	1953-4
Coal, coke and patent fuel for the public	21,71	**20,86**
Rice and paddy	3,89	**4,31**
Gram and pulses	5,19	**4,91**
Wheat and wheat flour	3,40	**3,22**
Oil seeds	3,97	**3,38**
Cotton raw (pressed and unpressed)	3,46	**3,36**
Fruits and vegetables fresh	2,54	**2,44**
Marble and stone	4,05	**4,08**
Salt	3,01	**3,66**
Manganese ore	2,27	**2,97**
Other ores	2,49	**3,51**
Oil fuel	2,71	**2,95**
Kerosene oil (in bulk and in tins)	3,20	**3,49**
Petrol (in bulk and in tins)	3,62	**4,18**
Wood unwrought	2,61	**2,50**
Sugar, refined and unrefined	3,88	**4,49**
Cotton manufactured	3,55	**3,39**
Vegetable oil and other edible oils	2,10	**1,98**
Cement	4,21	**4,90**
Iron and steel wrought	8,98	**9,11**
Provisions	2,98	**3,05**
Tea	1,99	**2,27**
Jute raw	1,91	**1,63**
Jute manufactured	1,22	**98**

Detailed statistics of goods traffic are given in Summary X, statements 13, 29 and 36 of Volume II of this Report.

33. Measures relating to statistics and statistical organization.—Among the more important steps taken during this year, towards improving railway statistics and statistical procedure, mention may be made of the revised instructions to ensure uniformity in the compilation of the marshalling yard statistics. Owing to differences in interpretation of definitions, it was found that there was some lack of uniformity in the basis of the data reported by the railways. A comprehensive revision of the rules was undertaken in order to ensure the compilation of these statistics on a uniform basis by all the railways.

The statistics of rolling-stock performance were also revised, so as to exhibit separately the distribution of the locomotive stock on line service-wise and the disposition and utilization of engines in terms of percentage of total engine hours spent in operation or otherwise. The figures of engine failures and engine miles per failure for passenger, mixed and goods train engines are now shown separately in addition to the existing total figure. As a result of the more detailed breakdown of engine time, it is now possible to ascertain the percentage of time the engines remain on the road in actual service or lie in the running sheds under servicing, *viz.*, coaling, watering, cleaning, wash-out, etc., minor repairs and idling. Care has been taken to see that the revisions made do not call for the collection of any additional data by the railways.

The statistics of revenue-earnings and non-revenue traffic about which mention was made in the last year's report under para. 30 are now available separately, details of which can be seen in statement 13 and summary X of Volume II of this report. Thus it is now possible to assess objectively the transportation required for moving the traffic of a non-revenue character consisting of coal and other materials intended for the use of the Railways themselves. Of the total originating tonnage on Indian Railways during 1953-4, the non-revenue tonnage accounted for 23·0 per cent of the total and the corresponding ton mileage was 16·4 per cent of the total.

CHAPTER III

TRANSPORTATION

A.—OPERATING

34. Operating, general.—During the year under review the punctuality of mail and important through passenger trains recorded a fall on both the metre and broad gauges mainly due to Kumbh *mela* traffic in January-February 1954, and earthquake in the Pandu Region of the North-Eastern Railway in the latter half of March 1954. On the metre gauge the percentage of such trains not losing time decreased from 77·4 during the previous year to 70·2 while on the broad gauge the decrease was from 77·5 to 74·8.

From 1 October 1953, the *Janata* Express train which was running between Madras—Egmore and Madura was converted into an ordinary express train and was extended to run to and from Tinnevelly.

The demands for the movement of goods continued generally to be in excess of wagon supplies and, in some cases also in excess of the capacities for movement over some routes and, therefore, could not in all cases be met currently. Position was particularly difficult in the following cases:

(*a*) Movements from the North to destinations on Southern Railway which are subject to quotas owing to the limited capacity over the routes concerned being fully taken up mostly by essential traffic. Most of loco coal for the Southern Railway continued to be diverted by the rail-*cum*-sea route *via* Calcutta.

In addition to certain special measures already taken, others in progress for stepping up the capacity, particularly on the North East Line of the Southern Railway, are expected to be completed by the end of the Plan period.

(*b*) Movements *via* break-of-gauge transhipment stations to the Western Railway, *viz.*, Agra East Bank, Sabarmati and Viramgam, which are also subject to limited quotas.

(*c*) Movements from the broad gauge to the North Eastern Railway across the Ganga river were restrictive due to limited capacity. In this case also, active measures are being taken to improve the capacity.

The running of the maximum number of goods trains to regular daily paths continued to receive the attention of the railways.

35. Transport of coal.—During the year, the control and distribution of coal continued as before through the Coal Commissioner's Office, under the administrative control of the Ministry of Production.

Compared to the previous year there was shortfall in loadings from West Bengal and Bihar and Hyderabad coalfields while there was slight improvement in loadings from Vindhya Pradesh, Madhya Pradesh and Orissa coalfields. In all, 1,377,018 broad gauge wagons were loaded showing a shortfall of 3·13 per cent as compared with loadings of the previous year. From West Bengal and Bihar coalfields 1,118,244 broad gauge wagons were loaded representing a shortfall of 4·21 per cent due mainly to severe limitations on the movement to Northern India during January and February 1954, which were necessary to accommodate the large number of special trains in connection with the Kumbh *mela* traffic. Loading from Hyderabad coalfields were affected on account of the strike at Singareni collieries for a period of about a month during June/July 1953.

The movement of coal, like that of other essential traffic, was subject to the limitations of availability of rolling-stock (wagons and engines) and of the availability of capacity over certain sections, such as to the south and *via* break-of-gauge transhipment, etc.

36. Movement of certain commodities by block trains.—Block, that is, full load, goods trains continued to be operated to carry specified commodities between certain stations during the year under report. The percentage of the total wagon loads of traffic moved by such block trains on the broad gauge railways slightly decreased from 9·94 per cent in 1952-3 to 9·47 per cent of the total wagon loadings excluding coal and coke and home line stores and material.

37. Working of the revised procedure for clearance of goods traffic introduced with effect from 17 August 1953.—As the demands for movement of traffic continue to be in excess of the available rail transport capacity, rationing of traffic is inevitable. The Preferential Traffic Schedule as revised from 17 August 1953 has, apart from making provision for movement of raw materials and finished products for certain basic industries such as textile, cement and iron and steel on a planned basis, also provides for the movement of all other commodities in varying quantities. This step has enabled all types of traffic to have a share in the available transport capacity.

Reports received indicate that the revised system has met with reasonable success and the trade are appreciative of the revised facilities provided in regard to the movement of what was formerly included in the category of non-preferential traffic.

38. Volume of traffic handled.—The downward trend in the volume of traffic handled which continued till 1952-3 was reversed during the year 1953-4. Passenger traffic measured in terms of passenger miles increased during 1953-4 from 36,928 million to 37,096 million or by 0·45 per cent. Goods traffic as indicated by net ton miles increased by 1·91 per cent to 29,200 million from 28,652 million. The increase in the passenger and goods traffic handled on the Government Railways is shown in the table below:

VOLUME OF TRAFFIC CARRIED ON GOVERNMENT RAILWAYS, NET TON MILES AND PASSENGER MILES

(Figures in millions)

	1952-3	1953-4	Increase or decrease % over 1952-3
Government Railways—			
Net ton miles*	28,652	**29,200**	+1·91
Passenger miles	36,928†	**37,096**	+0·45

* Excludes departmental.
† Revised figures.

39. Train miles.—The train mileage operated to handle the traffic during the year was 184·63 million which meant an increase of 3·41 million or 1·88 per cent over the figure for 1952-3.

TRAIN MILEAGE OPERATED DURING 1953-4 COMPARED WITH 1952-3

(Figures in thousands)

	1952-3	1953-4	Increase or decrease % over 1952-3
Government Railways—			
Passenger (including proportion of mixed)*	106,529	**110,920**	+4·12
Goods (including proportion of mixed)†	74,690	**73,706**	−1·32

* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, empty mileage run by passenger and other coaching stock, the mileage of electric locomotives and electric multiple trains as well as military specials but excludes departmental trains.

† Includes mileage of electric locomotive trains, but excludes departmental.

Passenger train miles increased during the year by 4·12 per cent to 110·92 million as compared with an increase of 0·45 per cent in passenger miles. Goods train miles totalled 73·71 million, representing a decrease of 1·32 per cent over the figure for the previous year as against an increase of 1·91 per cent in the ton mileage. Consequently, the average freight load of goods trains recorded an increase of 2·56 and 5·91 per cent on the broad and metre gauges respectively over the previous year.

The detailed figures of train miles of Government Railways are shown in statements 17 and 32 of Volume II of this Report.

40. Shunting miles.—Unproductive engine miles, classified under the head 'other engine mileage', showed, during the year a slight increase as compared with the previous year from 22·6 per cent to 22·9 per cent of the total engine mileage.

Shunting miles, forming the greater portion of such unproductive mileage amounted to 15·36 per cent of the total engine miles as against 15·18 per cent during 1952-3. The following table shows the ratio per 100 train miles of passenger and goods shunting miles on Government Railways during 1953-4 compared with 1952-3. It will be seen that as compared with the previous year less shunting miles were performed to move 100 train miles in respect of passenger services while the position deteriorated in respect of goods services.

SHUNTING MILEAGE DURING 1952-3 AND 1953-4
GOVERNMENT RAILWAYS

Shunting miles per 100 train miles	1952-3	1953-4	Increase or decrease % over 1952-3
Passenger and proportion of mixed—			
Broad gauge	6·22	6·21	−0·16
Metre gauge	6·73	6·22	−7·58
Goods and proportion of mixed—			
Broad gauge	39·0	40·8	+4·62
Metre gauge	40·8	43·2	+5·88

Other principal features of passenger and goods train operation of Government Railways during the year have been referred to in the following paragraphs.

41. Passenger trains.—It will be seen from the table below that on the broad gauge, passenger train services increased by 3·82 per cent, vehicle miles by 3·73 per cent and passenger miles by 1·03 per cent. The percentage increases in respect of passenger train miles and of vehicle miles on the metre gauge were 4·58 and 3·76 respectively accompanied by a decrease of 0·99 per cent in passenger miles. These figures indicate some relief to overcrowding on Government Railways on both the gauges.

STATISTICS OF PASSENGER TRAFFIC: GOVERNMENT RAILWAYS

(Figures in millions)

Particulars	Broad gauge 1952-3	Broad gauge 1953-4	Increase or decrease % over 1952-3	Metre gauge 1952-3	Metre gauge 1953-4	Increase or decrease % over 1952-3
Passenger miles	24,860·7	25,116·2	+1·03	11,522·6	11,409·3	−0·99
Coaching vehicle miles (including proportion of mixed)	1,009·5	1,047·2	+3·73	585·2	606·7	+3·76
Passenger train miles* (including proportion of mixed)	66·26	68·79	+3·82	37·10	38·80	+4·58

* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, empty mileage run by passenger and other coaching stock, mileage of electric locomotives and electric multiple unit suburban trains as well as military specials but excludes departmental.

42. Punctuality of passenger trains.—During the year there was a set back in the punctuality of passenger trains as already mentioned in the opening para of this Chapter. The deterioration occurred under all heads except in the case of mixed and suburban trains over the broad gauge, which alone showed some improvement. The following table will show the results achieved in the form of percentage of passenger and mixed trains not losing time to the total number of trains run on all Government Railways during 1953-4 as compared with 1952-3:

PERCENTAGE OF PASSENGER AND MIXED TRAINS NOT LOSING TIME

Year.	All trains (including electric multiple unit trains).	Mail (and important through trains).	Mixed trains.	Suburban trains.	Other passenger trains.
Broad gauge—	%	%	%	%	%
1952-3	82·14	77·49	83·90	83·85 84·58*	79·79
1953-4	**81·63**	**74·79**	**84·46**	**86·16** **81·69***	**78·71**
Metre gauge—					
1952-3	83·57	77·37	83·83	85·00 98·60†	80·46
1953-4	**81·62**	**70·19**	**80·74**	**73·68** **97·50†**	**79·79**

* Electric multiple unit trains of the Western and Central Railways.
† Electric multiple unit trains of the Southern Railway.

43. Augmentation of passenger train services.—Train services for the convenience of passengers continued to be augmented during the year. On 1 April 1954, the passenger train services on Indian Railways expressed in terms of train miles per day, had increased by about 3,357 on the broad gauge and 5,771 on the metre gauge, over those operating on 16 April 1953. Usually, the results of the efforts for augmentation of passenger train services are reflected in the revised time-tables introduced from 1 April every year. Last year, however, the revised time-tables were introduced from 16 April 1953, to commemorate the Centenary of the Indian Railways, which fell on that date.

44. Goods trains.—As compared with the previous year, goods train miles on the broad gauge decreased by 0·83 per cent, while wagon miles and net ton miles increased by 0·38 and 1·70 per cent respectively. On the metre gauge, however, there has been a decrease of 2·54 and 1·58 per cent both in train miles and wagon miles respectively, but an increase of 2·79 per cent in net ton miles. The table below gives the comparative figures for the year 1952-3 and 1953-4.

TRAIN MILES, TON MILES AND WAGON MILES, GOVERNMENT RAILWAYS DURING 1952-3 AND 1953-4*

(Figures in millions)

	1952-3	**1953-4**	Increase or decrease % over 1952-3
Broad gauge—			
Ton miles	24,360·2	**24,773·2**	+1·70
Wagon Miles	2,265·8	**2,274·3**	+0·38
Train miles—			
Goods (including proportion of mixed)	51·76	**51·33**	−0·83
Metre gauge—			
Ton miles	4,173·2	**4,289·8**	+2·79
Wagon miles	656·3	**645·9**	−1·58
Train miles—			
Goods (including proportion of mixed)	20·50	**19·98**	−2·54

* Excluded departmental.

45. Goods train speeds.—Speed of goods trains suffered a slight deterioration as compared with the previous year. On the broad gauge, it declined from 10·4 miles per hour in 1952-3 to 10·2 miles in 1953-4. On the metre gauge, it declined from 9·14 to 8·93 during the same period.

46. Goods train loads.—The average net load of goods trains (steam) over the broad gauge recorded an improvement this year as compared with the previous year by 12 tons from 469 in 1952-3 to 481 in 1953-4, while continued improvement was maintained on the metre gauge by 12 tons from 203 in 1952-3 to 215 in 1953-4.

47. Stock usage.—Efforts to improve the power position on Government Railways resulted during the year in an increase in the number of engines employed daily on different services in the total engine miles run and in the engine user. It will be seen from the figures included in the accompanying table that the total engine miles increased by 2·12 per cent on the broad gauge as against an increase of 0·63 per cent in the average number of engines in daily use. On the metre gauge, the total engine miles registered an increase of 1·18 per cent as against an increase of 2·15 per cent in the number of engines in use. The engine miles per engine day in use improved from 109 miles in 1952-3 to 112 miles in 1953-4 on the broad gauge. On the metre gauge, it, however, declined from 104 miles in 1952-3 to 103 in 1953-4.

STOCK USAGE ON GOVERNMENT RAILWAYS

Particulars	Broad gauge 1952-3	Broad gauge 1953-4	Increase or decrease % over 1952-3	Metre gauge 1952-3	Metre gauge 1953-4	Increase or decrease % over 1952-3
Average number of engines in use daily on different services	3,818	**3,842**	+0·63	1,957	**1,999**	+2·15
Total engine miles (in thousands)	151,450	**154,658**	+2·12	73,873	**74,747**	+1·18
Engine miles per day per engine in use	109	**112**	+2·75	104	**103**	—0·96

48. Engine usage.—Engine miles per day per engine on line (*i.e.*, inclusive of the time under repairs, etc.) registered further improvement on the broad gauge from 80 miles in 1952-3 to 83 miles in 1953-4. On the metre gauge, however, it dropped from 75 miles in 1952-3 to 74 miles in 1953-4. The percentage of locomotives under or awaiting repairs in Mechanical or Transportation workshops, to the total number on line stood at 18 per cent on the broad gauge, the same as during the previous year but on the metre gauge the percentage increased from 17 in 1952-3 to 18·5 in 1953-4.

The amount of work done, associated with revenue earnings, by locomotives expressed by the statistical unit 'net ton miles per goods locomotive day in use/on line' recorded improvement on the broad gauge but suffered a set back on the metre gauge during the year under review in comparison with the previous year.

STATISTICS OF LOCOMOTIVE USAGE, GOVERNMENT RAILWAYS

—	Net ton miles. Broad gauge. Per goods locomotive day on line.	Broad gauge. Per goods locomotive day in use.	Metre gauge. Per goods locomotive day on line.	Metre gauge. Per goods locomotive day in use.
1952-3	18,634	27,518	7,745	12,066
1953-4	**19,251**	**27,896**	**7,377**	**11,831**
Increase or decrease % over 1952-3	+3·31	+1·37	—4·75	—1·95

Details of engine usage are shown in statement No. 22 of Volume II of this Report.

49. Wagon usage.—During the year, the wagons were hauled on an average of 40·1 miles and 28·4 miles a day on broad and metre gauges respectively as against 41·1 and 31·4 miles respectively during 1952-3 thus indicating a drop on both the gauges. The net ton miles moved per wagon day also recorded a similar decrease from 444 to 440 on the broad gauge and 204 to 193 on the metre gauge. The percentage of wagons under or awaiting repairs in mechanical and transportation workshops and sick lines to the total goods stock on line improved both on the broad and metre gauges from 7·53 and 8·23 per cent in 1952-3 to 7·34 and 7·42 per cent in 1953-4 respectively.

50. Wagons loaded with 'smalls'.—As compared with the previous year, the 'smalls' traffic increased during 1953-4 on the broad and metre gauges, both in the number of wagons loaded with 'smalls' and as expressed as a percentage to the total traffic.

NUMBER OF WAGONS LOADED WITH 'SMALLS' GOVERNMENT RAILWAYS

—	Number		Increase or decrease % over.	Percentage of the total number of wagons loaded.	
	1952-3	**1953-4**	1952-3	1952-3	**1953-4**
Broad gauge	309,856	**355,768**	+14·8	7·05	**8·21**
Metre gauge	293,874	**354,535**	+20·6	11·12	**14·13**

51. Improvement in marshalling and other yards and their working.—*Central Railway.*—The works for providing facilities for watering and servicing of the yard shunting engines in the yard at Ajni were completed. The track work in connection with the remodelling of the yard at Kazipet was completed upto 80 per cent and the signal and interlocking work was being progressed, the overall progress being 60 per cent.

Works in connection with the provision of additional facilities for cross traffic at Kalyan, remodelling of down yard at Itarsi, provision of additional lines at Amla, and yard facilities at Bina were in progress.

Eastern Railway.—Works of remodelling yards at Khurda Road and Bhadrak, provision of a new yard at Jugsalai to deal with increased movements of raw materials to Tata Iron and Steel Company made good progress. Remodelling of Bijuri Yard in connection with Railway siding and assisted siding to serve Rajnagar and Jhagrakhand collieries has also progressed. Bilaspur station was remodelled. Additional marshalling line, connected to the mill siding, was provided at Dehri-on-Sone. Works at Sakrigali Junction were nearing completion.

Northern Railway.—The provision of additional lines in the Up and Down goods yards at Lucknow was completed and works for providing grid in classification yard at Juhi was in progress.

North Eastern Railway.—Remodelling of Jugaur station yard was completed. Improvements to the marshalling yard at Siliguri Junction were in progress.

Southern Railway.—The work at Tondiarpet marshalling yard regarding alterations to the goods reception and despatch lines to deal with 80 vehicles is progressing whilst the gradient of the east hump, which was found to have fallen considerably below the requisite standard of 1 in 30, has been raised to the authorized standard. At Guntakal, additional transhipment lines for the metre gauge yard have been provided whilst work in connection with the shifting of the broad gauge goods shed and the provision of additional broad gauge transhipment lines is in progress. At Tadepalli, the work in connection with the provision of additional transhipment facilities is nearing completion. At Bangalore City, the work of improving the yard facilities is nearing completion.

Western Railway.—Additional shunting neck in Gangapur and Kotah yards, two sorting lines at Udhna yard, and additional lines in Surendranagar yard were provided. Improvements were made to sick lines at Agra East Bank.

52. Wagon position, broad gauge wagon pool.—The number of public service wagons (in terms of four wheelers) in use on all Indian Railways in the wagon pool at the end of 1953-4 was 158,444, *i.e.*, 3,109 more than that at the end of the previous year. The total number of wagons loaded during the year was 4,338,359 a decrease of 55,456 wagons or 1·26 per cent as compared with the previous year. Demands for wagons exceeded from time to time their availability on most of the Railway.

53. Wagon position, metre gauge wagon pool.—

(a) *Northern.*—The number of public service wagons (in terms of four wheelers) in use on all Indian Railways on 31 March 1954, including reconditioned W. D. Stock, was 47,470, *i.e.*, 1,141 wagons more than that at the end of the year 1952-3. The wagon position continued to be difficult as the demands were from time to time in excess of the wagon supply. The total number of wagons loaded during the year was 1,668,534 representing a decrease of 113,714 or 6·38 per cent, as compared with the previous year.

(b) *Southern.*—The total number of public traffic wagons in use on the metre gauge railways in Southern India on 31 March 1954, was 18,335, *i.e.*, 322 wagons less than that at the end of the previous year. The total number of wagons loaded during the year was 840,381 representing a decrease of 3,223 wagons or 0·38 per cent as compared with the previous year. The wagon position continued to be difficult throughout the year.

54. Interchange with Pakistan Railways.—During the year, Indian Railways made over to the Pakistan Railways 43,033 broad gauge wagons, including 34,833 loaded wagons. Of the 1,935 metre gauge wagons made over to Pakistan Railways, 1,033 were loaded. The total number of wagons received from the Pakistan Railways was 42,567 broad gauge, including 14,748 loaded, and 1,979 metre gauge, of which 498 were loaded. On an average the Pakistan Railways were creditor by 983 broad gauge and 215 metre gauge wagons daily during the year.

55. Neutral control examination of wagons at interchange junctions, etc.—The system of Neutral Control Examination of wagons under the Director of Wagon Interchange was in force at the following points:

(i) *Interchange junctions*—

Broad gauge	*Metre gauge*
Ajni (Nagpur)	
Chheoki	
Ghaziabad*	
Khanalampura*	
New Delhi*	
Waltair	
East Dock Junction	
Kanpur (GMC)	
Agra Cantt.	
Agra East Bank	

(ii) *Workshops*—

Broad gauge	
Lillooah	Gorakhpur
Jhansi	Abu Road (from 14 August 1953)
Matunga	Mehsana (from 28 August 1953)
Parel (Mahalaxmi)	
Alambagh	
Kanchrapara	
Kharagpur	

(iii) *Marshalling yards*—

Moghalsarai
Tondiarpet

* Neutral Control has been continued at these points though Ghaziabad and Khanalampura have ceased to be interchange junction.

Flying Squad.—A flying squad attached to the office of the Director of Wagon Interchange is engaged in checking up the general condition of goods stock at various important junctions on the different railways.

56. Coal supply and coal stock position.—The stocks of steam coal on Indian Government Railways, which stood at 21·1 days consumption requirements at the beginning of the year, dropped to 20·8 days' requirements on 10 April 1953. Thereafter the stock position rose steadily to 23·1 days' level on 31 May 1953, but again declined gradually to 18·9 days' requirements on 10 July 1953. This was followed by gradual upward trend till the stocks reached a level of 25·6 days' on 31 December 1953. Then there was a set back and the stock steadily dropped to 16·9 days' requirements at the end of the year.

The rise in the level of coal stocks at the end of December 1953, as referred to above, represented the reserves which had been built up—

(i) for increased coal consumption for the large number of additional passenger trains to cope with the Kumbh *mela* traffic; and

(ii) for anticipated reduction in the movements *inter alia* of coal traffic for above Moghalsarai during the Kumbh *mela* period.

The additional rail transport capacity was provided towards building up the stocks.

The drop subsequent to the Kumbh *mela* and at the end of the year was the result of increased consumption of coal for additional train services during the Kumbh *mela* and also of reduction, for a period, in the movements of loco coal, particularly as compared with the increased movements of coal prior to the Kumbh *mela* period. This reduction in the movements of coal was found necessary for stepping up the movement of other traffic which had suffered a set-back during the Kumbh *mela* period.

The railways affected most seriously were the Central (Great Indian Peninsula portion) and Western (Bombay, Baroda and Central India portion). In order to meet their demand, arrangements were made to despatch a part of their requirements of coal by rail-*cum*-sea route at a higher cost than the normal rail route as a special case.

In spite of the imposition of penalties by the Government on collieries resorting to loading of coal below the specific standard, complaints regarding supply of inferior quality of coal continued to be made by railways to the Coal Commissioner.

The supplies of metallurgical coal to railways were not reduced during the year as the total production of this coal continued to be in excess of the requirements for metallurgical purposes and non-metallurgical coal of equivalent calorific value was not available in adequate quantities, after meeting the demands of the other consumers, to replace the metallurgical coal being supplied to railways.

57. Withdrawal of First class accommodation from trains.—The matter of progressive elimination of First class accommodation from Indian Railways was pursued during the year under review.

From 16 April 1953, First class was abolished from all branch and main line trains, except Mail, Express and some other important trains. With effect from 1 October 1953, this class of accommodation was further withdrawn from most trains and limited to fifteen Up and fifteen Down fast long distance trains and the suburban trains in Calcutta and Bombay areas.

B.—COMMERCIAL

58. Alterations in rates and fares.—

I.—*General.*—The general economic conditions in the country showed signs of improvement during the year under review. Controls were steadily relaxed and there was a freer movement of traffic. Following the price recession that generally occurred there was a tendency for the trade to make representations for reductions in railway freight. These representations were examined by individual railways and special rates quoted wherever justified.

II. *Goods.*—The important changes in freight rates during the year are summarized below:

(i) With a view to securing uniformity and rationalization the very low rates for sugarcane in force over the Northern, North Eastern and Eastern Railways and metre gauge section of the Western Railway were revised from 1 July 1953 and refixed on the same basis as in force over other railways.

(ii) The special rate of Re. 0-4-6 per 4-wheeled wagon per mile at owner's risk plus full terminals for the carriage of dry cattle and their calves from Bombay, Calcutta and Madras to up country stations for grazing purposes which was introduced for a period of one year from 1 March 1953 with a view to helping the salvaging of such animals was extended for a further period of one year from 1 March 1953.

(iii) Concessional rates at half the basic rates plus terminals were granted for gift grains in wagon loads despatched from certain stations to scarcity areas in Ahmednagar, Poona, East Khandesh, Sholapur, West Khandesh, Satara South, Nasik, Bijapur, Belgaum, Panch Mahals, Ahmedabad and Amreli Districts for relief purposes.

(iv) Consignments of food and clothing despatched as gifts for use in the flood affected areas of Uttar Pradesh, Bihar and Andhra were charged at half the tariff rates by goods trains plus full terminals.

(v) To meet the pressing need for fodder in the scarcity areas in the Bombay, Saurashtra, Rajasthan, Mysore and Madras States the concessional rates for the carriage of fodder or forage were applied for traffic between certain stations.

(vi) Over the Northern Railway rates 15 per cent less than the lumpsum wagon rates for covered wagons were provided for fire-wood when booked in open wagons having the same floor area.

III. *Coaching*—

A. *Passenger fares*—

(i) To further encourage travel to the hill stations during the summer, the concessional hill return tickets at 1½ single journey fares available for three months were extended to Inter class passengers as well in addition to First and Second classes. This concession was not allowed for Air-conditioned class. These tickets were issued till 31 October 1953 from all stations from which the chargeable distance is 75 miles or more to the following stations:

Simla, Dehra Dun, Pathankot, Kathgodam, Ootacamand, Kodaikanal Road, Abu Road, Coonor, Darjeeling, Kurseong, Shillong, Solan and Dharampur.

(ii) With effect from 15 May 1953 and upto 31 October 1953, First, Second and Inter Class rail-*cum*-road return tickets were also issued from certain important stations on the Indian Railways to Srinagar, *via* Pathankot, at 1½ single journey fares upto Pathankot and 2 single journey fares over the road portion. From 10 September 1953, the concessional rail fare was further reduced to 1⅓ single journey fares upto Pathankot the other conditions remaining unaltered. In the case of return journeys, the road fare was reduced to Rs. 27 per seat with effect from 1 October 1953, the single journey road fares from Pathankot to Srinagar or *vice versa* remaining the same as before, *viz.*, Rs. 20 per seat.

In addition to the above, with effect from 1 October 1953, the facility of travelling by air between Pathankot and Srinagar was extended to Second and Inter class passengers in conjunction with Indian Airlines Corporation.

(iii) To encourage public travel to visit the Railway Centenary Exhibition at Delhi, concessional return tickets for First, Second, Inter and Third classes were issued from 5 May to 14 May 1953, both days inclusive, at one and two third single journey fares, to Delhi and New Delhi from stations distant 500 miles and over, available for 14 days from the midnight of the date of issue.

(iv) A number of return tickets at concession fares were introduced by railways either in connection with *melas* or generally between specified points.

B. *Excursion special trains.*—With effect from 1 September 1953, the following concessions were granted in connection with the running of excursion special trains:

(1) Kitchen arrangements	One bogie vehicle free of charge.
(2) Cooks and servants	A minimum number of 4 to be allowed free.
(3) Conductors	One to be allowed free.

C. *Parcels.*—The concession rates by passenger or parcels trains for handloom products were extended to handloom cotton carpets also.

59. Effect of changes in rates and fares—*Goods traffic.*—This was the fifth year in which the revised rates structure introduced with effect from 1 October 1948 operated throughout, and there has been no evidence to show that the revised rates structure had an adverse effect on movements of traffic.

The volume of traffic originating during the year under review was 98,136,000 tons as against 97,123,000 tons during 1952-3, thus recording an increase of approximately 1 per cent.

The freight (net) ton miles during 1953-4 were 29,436 millions, as against 28,906 millions during the previous year recording an increase of 1·8 per cent.

Passenger traffic.—The bases of passenger fares remained unchanged during the year under review.

There was a slight increase in the number of passengers carried from 1,233,552,500 in 1952-3 to 1,238,097,600 in 1953-4 but a slight decrease in the earnings derived from passenger traffic from Rs. 1,00,38,38,000 in 1952-3 to Rs. 99,92,02,000 in 1953-4.

60. Efforts to secure better wagon usage and wagon loads.—The measures previously in force were continued during the year with a view to securing maximum starting wagon load. These included keeping a check over the loads given to wagons at transhipment points.

The condition that the minimum weight for purposes of registering requests for wagons would be 240 maunds per 4-wheeled broad gauge wagon and 160 maunds per 4-wheeled metre gauge wagon, introduced during the year 1951-2, was continued during the year under review. Suitable relaxation in these minima weights was, however, permitted in the case of certain commodities for which the weight condition was found unduly high.

The minimum weight for the charging of freight for the different wagon load scales remained unaltered.

Endeavours continue to be made by railways towards improving the turnround of wagons and thereby obtain better wagon usage.

61. Co-ordination of rail-road and water transport—*Bombay State.*—The general policy of co-ordinating rail and road transport, with a view to developing all forms of transport, in their appropriate spheres and avoiding wasteful competition, was continued during the year under review. The railways continued to participate financially in some of the co-ordinated road transport undertakings. While there was no participation in any new undertaking during the year the Central Government invested a further sum of Rs. 50 lakhs in the Bombay State Road Transport Corporation as their share of the increased capital of that Corporation. During the year under review, the Bombay State Road Transport Corporation made steady progress as the following data will indicate:

(1) Number of routes operated on 31 March 1953	1,097
" " " " " **31 March 1954**	**1,478**
(2) Total route mileage in operation on 31 March 1953	33,941
" " " " " " **31 March 1954**	**40,354**
(3) Monthly vehicle mileage operated 1952-3	3,758,497
(average for 1953-4)	**4,454,688**
(4) **Estimated revenues for 1953-4**	**Rs. 699·73 lakhs**
(5) **Estimated expenditure for 1953-4**	**Rs. 667·50 lakhs**
(6) Profit 1952-3	Rs. 24·38 lakhs
" **1953-4**	**Rs. 32·23 lakhs**

The services of this Corporation covered parcels and goods services also.

The total annual earnings realised through parcels traffic was Rs. 1,35,194.

As for goods traffic the details are:

(1) Monthly truck mileage operated	204,569
(2) Total earnings	Rs. 23,36,778
(3) Total expenditure	Rs. 22,00,467
(4) Profit	Rs. 1,36,311

During the year 1953-4, the Corporation paid to the Railways Rs. 12,89,574 as interest at $4\frac{1}{2}$ per cent on their capital investment.

Madhya Pradesh.—The two railway associated road transport companies in Madhya Pradesh, *viz.*, the Central Province Transport Services Limited and the Provincial Transport Company Limited, also made steady progress during the year 1953-4, as will be seen from the following financial results of their operation.

Provincial Transport Company Limited, Nagpur

Monthly vehicle mileage	1952-3	275,778
	1953-4	**297,700**
Income	1952-3	Rs. 34,73,198
	1953-4	**Rs. 37,63,000**
Expenditure	1952-3	Rs. 29,22,599
	1953-4	**Rs. 30,48,000**
Profit	1952-3	Rs. 5,50,599
	1953-4	**Rs. *7,15,000**

* Subject to audit verification.

The Company paid Rs. 32,529 as dividend for the year on the Central Government's investment.

Central Province Transport Services Limited, Nagpur

Monthly vehicle mileage operated	1952-3	307,462
	1953-4	**284,318**
Income	1952-3	Rs. 38,51,579
	1953-4	**Rs. 41,36,971**
Expenditure	1952-3	Rs. 32,84,616
	1953-4	**Rs. 32,19,001**
Profit	1952-3	Rs. 5,66,963
	1953-4	**Rs. 9,17,970**

The Company paid a dividend of Rs. 74,700 on the Central Government's share during the year.

Orissa.—The Central Government made a further investment of Rs. 3 lakhs in the Orissa Road Transport Company Limited bringing their total investment to Rs. 6 lakhs at the end of the year under review. The general meeting of the company for declaration of dividend, if any, could not be held.

Himachal Pradesh—Kulu Valley Transport Limited.—The services of the Kulu Valley Transport Limited were revived, under the management of the Himachal Government Transport, from the 5 October 1953. With the active participation of the Himachal Pradesh Government and inflow of much needed capital, the Kulu Valley Transport had by end of March 1954, turned the corner. As many as 18 vehicles had by then been put on the route covered by the Company.

Uttar Pradesh.—In the interest of healthy development of transport facilities in the country, it was agreed in principle to participate in the nationalized road undertaking of the Uttar Pradesh State Government.

Other States.—The setting up Road Transport Corporations (with financial participation by the States as well as the railways) in Kutch, Ajmer and Punjab was under active consideration during the year.

62. **Closer contact with business people.**—Close contact was maintained with trade, commerce and industry through meetings held by railway officials at different levels with representatives of chambers of commerce, trade associations, and merchants at important centres, with a view to ascertaining their requirements and devising ways and means to meet them.

An important step taken for maintaining liaison with the commercial interests was the setting up of the National Railway Users' Consultative Council at the Centre and the Zonal and Regional Railway Users' Consultative Committees on the railways.

63. **Claims for compensation and refunds.**—As many as 376,680 claims were settled by the Indian Railways during the year under review, against 365,215 during 1952-3, the number of claims which remained unsettled at the end of the year 1953-4, being 68,859 as against 71,149 at the end of 1952-3, showing a reduction of 3 per cent.

The net amount paid by the railways during the year under review on account of goods lost or damaged was Rs. 2,89,22,804 against Rs. 3,18,66,922 paid in 1952-3.

The reduction in the amount paid is attributed to the various claims preventive measures adopted by the railways.

The average time taken in the settlement of a claim was 68 days against 71 days during 1952-3.

The number of suits filed and those which remained outstanding at the close of the year were 32,648 and 17,253 respectively, as against 24,296 and 14,598 during the year 1952-3. The increase is attributable, in a large measure, to a greater number of suits having been filed by the claimants to avoid the possibility of repudiation by the railways on the grounds of limitation.

The following statements for Indian Railways show for 1953-4:

(*a*) the number of claims received in respect of goods or parcels damaged or lost and of goods and parcels overcharged and the average time taken in their settlement;

(*b*) the number and value of claims in respect of goods or parcels lost or damaged under the main causes;

(*c*) the number of court cases in respect of goods or parcels lost, damaged or delayed and their disposal.

STATEMENT A

Claims received for goods or parcels damaged, lost or over charged, and the average time for settlement

Item No.	Particulars	Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Number of claims involving compensation for goods or parcels lost, damaged, or delayed, carried over as unsettled at the close of the preceding year	12,587	25,286	7,321	12,447	9,988	3,520	71,149
(2)	Number of claims received (and re-opened) for compensation on account of goods or parcels lost, damaged, or delayed during the current year	64,230	108,398	57,512	35,148	50,202	58,268	373,758
(3)	Number of claims referred to against (items 1 and 2) settled during the year	64,039	108,478	58,658	34,500	53,257	57,748	376,680
(4)	Balance outstanding as unsettled at the close of the year	13,410†	25,206	6,175	13,095	6,933	4,040	68,859†
(5)	Net amount paid in compensation	Rs. 52,52,977	1,16,35,607	20,46,850	31,31,389	32,78,888	*35,77,093	2,89,22,804
(6)	Percentage of sum paid in compensation (item 5) to gross earnings	1·92	1·65	0·40	2·90	0·74	1·38	1·28
(7)	Average time taken in settlement of claims shown against items (1) and (2) (days)	77	71	62	70	71	46	68
(8)	Number of applications received for refunds on goods and parcels over-charged	12,743	34,732	30,673	10,615	32,737	24,842	146,342
(9)	Average time taken in settlement of claims shown against item (8) (days)	175	90	43	81	35	79	73

* Unaudited figures.

† Includes 632 outstanding claims taken over from the *ex*-Barsi Light Railway on 1 January 1954.

STATEMENT B

Number and Value of Claims Paid

Item No.	Particulars		Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Claims paid on account of goods lost	No.	24,666	10,368	12,145	3,318	7,596	23,100	81,193
		Value (Rs.)	31,33,151	19,71,910	18,68,733	7,41,937	7,17,788	22,67,055	1,07,00,574
(2)	Claims paid on account of goods stolen	No.	*	16,466	4,779	1,561	146	56	23,008
		Value (Rs.)	*	34,88,114	3,75,302	4,19,860	33,576	20,712	43,37,564
(3)	Claims paid on account of goods damaged by wet	No.	4,349	6,036	635	664	291	4,667	16,642
		Value (Rs.)	3,76,512	14,53,391	89,726	1,39,286	52,217	7,53,638	28,64,770
(4)	Claims paid on account of goods damaged by fire	No.	13	6	34	3	20	27	103
		Value (Rs.)	13,501	15,414	18,252	1,142	7,100	1,06,507	1,61,916
(5)	Claims paid on account of goods damaged by breakage	No.	301	1,076	688	19	185	232	2,501
		Value (Rs.)	25,687	1,83,183	60,049	11,036	18,441	37,663	3,36,059
(6)	Claims paid on account of parcels and luggage lost and stolen	No.	4,582	10,977	3,331	1,975	2,511	7,073	30,449
		Value (Rs.)	5,82,019	16,63,564	2,38,766	3,73,203	2,71,436	5,84,244	37,13,232
(7)	Claims paid on account of other causes	No.	4,010	12,493	6,751	8,553	12,296	793	44,896
		Value (Rs.)	6,18,604	15,61,629	13,34,050	19,83,315	9,46,768	1,11,169	65,55,535

* Included in item 1.

STATEMENT C

Number of Court Cases in respect of Claims and their Disposal

Item No.	Particulars	Central	Eastern	Northern	North Eastern	Southern	Western	Total all railways
(1)	Number of suits filed in court (or pending from the previous year) for the recovery of compensation in respect of goods or parcels lost, damaged or delayed	3,638	12,165	5,371	7,254	1,055	3,165	32,648
(2)	Number of such suits settled out of court	1,060	4,351	1,739*	1,811	321	877	10,159
(3)	Number of suits dismissed	199	580	1,104	261	146	739	3,029
(4)	Number of suits decreed	292	908	287	456	64	200	2,207
(5)	Number of suits pending	2,087	6,326	2,241	4,726	524	1,349	17,253

* Includes 278 cases transferred to foreign railways.

64. Special drive for prevention of claims.—During the year under review the number of new claims received or re-opened was 373,758 as against 352,672 in 1952-3.

The increase in the number of new claims registered during the year under review was mainly due to

(i) *Decontrol of foodgrains.*—The traffic in this commodity previously booked on Government account in large quantities under a few invoices, was spread over and moved in smaller loads under a larger number of invoices, thus resulting in an increase in the "Number" of claims.

(ii) The monsoon in 1953 was extremely vigorous and somewhat erratic. In consequence damage by wet and claims on that account increased very considerably.

The prevention of claims continued to receive the sustained attention of Railways. Spot checks at stations, marshalling yards, goods sheds, transhipment sheds and parcel offices were regularly conducted, and increasing emphasis was laid on the correct method of marking, loading, labelling and handling of consignments. Ellis-Patent of locking of wagons containing merchandise traffic was continued and extended. "P. L. M. Check up" and "Stop Rough Handling" weeks were periodically observed in order to impress on all concerned the importance of basic precautions in the prevention of claims.

65. Ticketless travel.—The need for intensifying the efforts against ticketless travel was fully realised and sustained attention was paid to this matter by all the railways.

Special measures were adopted for carrying on intensive drives against ticketless travel with the assistance of the Special Railway Magistrates and the Police, in Uttar Pradesh and Bombay States and also on the portions of the Eastern and the North Eastern Railways lying in the State of Bihar. The magistrate in Assam also continued to function, and sanction was accorded to the creation of the post of a second Railway Magistrate in the same State.

For checking ticketless travel effectively, railways were also authorised to appoint additional ticket checking staff on a temporary basis, where considered necessary.

The number of passengers detected travelling without proper passes or tickets and the amount realised from them during the year under review were 6,957,255 and Rs. 1,45,12,501 the corresponding figures for the previous year being 8,415,088 and Rs. 1,66,68,073 respectively.

66. *Mela* traffic.—The Purna Kumbh *mela* at Prayag which occurs once in twelve years, fell during the period from 1 January 1954 to 28 February 1954 and elaborate arrangements were made to cater for the enormous traffic anticipated.

The *mela* area was served by four permanent railway stations on the broad gauge, *viz.*, Allahabad Junction, Naini, Prayag and Phaphamau and three on the metre gauge—Allahabad City, Daraganj and Jhusi. In addition, two new broad gauge terminal stations Allahabad Sangam and Prayag Ghat were opened.

The total number of pilgrims carried by the railways concerned to and from Kumbh *mela* was as under:

Northern Railway	4,096,010
North Eastern Railway	870,000
Central Railway	659,382

To cater for this heavy traffic, as many as 1,224 special trains as detailed below were run by the various railways to and from the *mela* zone:

Northern Railway	524
Eastern Railway	175
Central Railway	238
North Eastern Railway	287

The elaborate arrangements made included additional waiting halls, bathing places, sanitary arrangements, additional watermen, tea and food stalls, additional booking offices or windows, platforms, shelters and electrification of stations.

In regard to the other fairs the necessary arrangements were made, as and when required, to clear traffic for the *melas* and fairs held during the year. The composition of the daily service trains were strengthened and special trains were run as and when necessary.

67. Measures to ensure civility and assistance on the part of the railway staff in their dealings with the public.—The Railway Administrations continued to pay the utmost attention to this matter.

Special efforts were made to educate the staff with regard to the importance of behaving in a courteous manner towards passengers and prompt cognizance continued to be taken of all complaints under this head and adequate action taken against the staff in all proved cases.

There are clear indications that the staff are appreciating, in a larger measure, their responsibility in this matter.

68. Measures taken to foster tourist traffic.—The usual facilities for the tourist traffic continued to be provided during the year 1953-4.

With effect from 15 May 1953, rail-*cum*-road return concessional tickets for First, Second and Inter class passengers were issued from certain important stations on all the Indian Railways to Srinagar. Also, with effect from 15 September 1953, rail-*cum*-air return concessional tickets for First, Second and Inter class passengers were issued to Srinagar from certain important stations. These concessions resulted in a marked increase in the tourist traffic to Kashmir during the year under review.

With a view to encouraging tourist traffic, tourists were exempted from depositing the minimum charges for haulage and demurrage for reserved carriages as per rules, provided they applied through recognised tourist agents or their journeys were sponsored or recommended by Indian Embassies abroad.

Another measure taken to foster tourist traffic was to provide new retiring rooms or to make improvements in the existing retiring rooms at certain tourist centres. The retiring rooms at Bolpur and Amritsar were completed, and the work in connection with the provision of new retiring rooms at Kanpur and Mathura, and the improvements to the existing retiring rooms at Madura and Trichinopoly, to suit the requirements of tourists, were in progress during the year under review.

CHAPTER IV

NEW CONSTRUCTIONS AND ENGINEERING WORKS

69. Capital expenditure.—At the end of March 1954, the total capital-at-charge of all railways, including lines under construction, amounted to Rs. 878·45 crores, of which Rs. 869·30 crores represented the capital-at-charge of the Indian Government Railways, inclusive of the premia paid on the purchase of certain companies' lines. The balance of Rs. 9·15 crores was the capital raised by Companies and District Boards.

The figure of capital-at-charge of Indian Government Railways which is provisional, pending closing of the pre-partition accounts and finalization of the balances brought forward on 1 April 1950 in case of ex-States' Railways, comprises the following items:

	£
Liability and debt incurred in the purchase of railways	131,164.798
Less liability and debt cancelled by the operation of annuities and sinking funds	23,756,284
Net amount outstanding	107,408,514
	Rs.
Direct expenditure by Government (in thousands)	7,26,08,36
Amount in sterling converted into rupees (in thousands)	1,43,21,58*
GRAND TOTAL	8,69,29,94

By far the greater portion of this amount, namely, Rs. 8,68,46,47 thousand is Government Capital and only a sum of Rs. 83,47 thousand is owned by District Boards.

The total capital outlay on all railways during 1953-4 was Rs. 11·94 crores of which Rs. 11·85 crores related to Indian Government Railways.

The distribution of the capital outlay in 1953-4 over the different Indian Government Railways is shown in the following statement:

CAPITAL OUTLAY ON INDIAN GOVERNMENT RAILWAYS DURING 1953-4

(Figures in lakhs of rupees)

Railways	Open lines			New lines			GRAND TOTAL
	Works, etc.	Rolling stock	Total	Works, etc.	Rolling stock	Total	
(1) Central	—6	1,79	1,73	3	..	3	1,76
(2) Eastern	—2,38	2,22	—16	24	..	24	8
(3) Northern (Commercial)	66	64	1,30	..	..	..	1,30
Northern (Strategic)	—2	1	—1	1	..	1	..
(4) North Eastern	1,43	83	2,26	12	..	12	2,38
(5) Southern	57	1,39	1,96	33	..	33	2,29
(6) Western	—19	2,50	2,31	9	..	9	2,40
(7) Chittaranjan Locomotive Works.	1,37	..	1,37	..	..	..	1,37
(8) Coal Department	—50	..	—50	..	..	..	—50
(9) Integral Coach Factory	79	..	79	..	..	..	
(10) Ganga Bridge Project	..	..	..	—2	..	—2	—2
TOTAL	1,67	9,38	11,05	80	..	80	11,85

* The amounts, £2,575,000, £2,000,000, £1,500,000 and £1,000,000, representing the share capital respectively of the Great Indian Peninsula, the Bombay Baroda and Central India, the Madras and Southern Maharatta and the South Indian Railways (the first two amounts being paid off during 1925-6 and 1941-2 respectively, and the last two during 1944-5) have been converted at the appropriate average rates of exchange for those years and the balance of £100,333,514 at the rate of 1*s*. 6*d*. to the rupee.

70. Mileage of lines opened during 1953-4.—The following new lines representing an addition of 144·24 miles were opened during the year:

Railway	Name of Line	Mileage
	New Lines	
Eastern	Kastagram-Pariharpur	16·97
Northern	Rail link to Chandigarh	3·78
Western	Diggi-Toda Rai Singh, portion of Sanganer Town—Deoli extension	27·53
	Pihij-Nadiad	3·52
	Restoration of Dismantled Lines	
Eastern	Bobili-Salur	10·60
Northern	Balamau-Madhoganj portion of Unao-Madhoganj-Balamau Line	14·50
Southern	Shoranur-Angadipuram portion of Shoranur-Nilambur Line	17·57
	Madura-Usilampatti portion of Madura-Bodinaya-Kanur Line	23·16
Western	Vasad-Kathana	26·61
	TOTAL	144·24

71. Lines under construction during 1953-4.—A total mileage of 715·93 miles was under construction during the year. The details of the lines are shown below:

Railway	Name of Line	Mileage
	New Lines	
Central	Khandwa-Hingoli	187·23
	Kurla-Trombay	5·80
Eastern	Champa-Hasdeo River *via* Korba	24·00
Northern	Chunar-Robertsganj-Churk	50·25
North Eastern	Dauram Madhepura-Murliganj	13·80
Southern	Quilon-Ernakulam	96·55
Western	Rajkot Town-Rajkot Junction	4·48
	Gandhidham-Kandla	6·24
	Gop-Katkola	20·09
	Restoration of Dismantled Lines	
Eastern	Bhagalpur-Mandar Hill	31·30
Northern	Unao-Madhoganj portion of the Unao-Madhoganj-Balamau Line	48·02
	Nagrota-Jogindernagar	35·00
	Utraita-Sultanpur-Zaffarabad	136·46
Southern	Angadipuram-Nilambur	23·93
	Usilampatti-Bodinagakanur	32·78
	TOTAL	715·93

72. Lines closed during 1953-4.—No lines were closed during the year.

73. New surveys.—Six surveys aggregating about 609 miles were sanctioned during the year as per details given below:

Railway	Gauge	Mileage
I. Central		
(1) Diva-Dasgaon	B. G./M. G.	93
(2) Khandwa-Hingoli	M. G.	187
II. Southern		
(1) Hassan-Mangalore	B. G.	120
III. Western		
(1) Bhavnagar-Tarapur	B. G.	76
(2) Raniwara-Bhiladi	M. G.	44
IV. Northern		
(1) Rail connection to Etah (3 alternative routes)	M. G.	89
TOTAL		609 miles

74. Damage caused to railways by floods and cyclones.—The following table gives the extent and character of the major items of damage caused by

floods and cyclone during the year. The damages were mainly due to heavy rainfall :

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
				Rs.
	Central Railway			
Mudkhed-Adilabad	The track between miles 85/13-14 and 86/2 between Kosai and Ambari stations was washed away due to heavy rains. The earthwork under the track was completely washed away and the track had become water logged.	14-8-1953	About 34 hours	700
Purna-Hingoli	Due to a heavy cloud burst in the catchment of girder bridge No. 16 the embankment between miles 216/16 to 217/4 was breached. The permanent way was displaced up to a distance of 30 ft. from the Centre line.	3-9-1953	Over 5 days	20,000
	Eastern Railway			
Gokulpur-Midnapur	(1) As a result of flood in Cossye river on 30 June, 1953, water rose to a level of 7′-6″ below the bottom girder of Cossye Bridge No. 143. This caused heavy damage to the embankment of Gokulpur and the bank of the Trolly line to Cossye wells was breached at two places. The first pier of the bridge at Midnapur and the tunnels for water pipe from Cossye wells were badly damaged. The wells at Cossye also became silted up.	—	*Nil*	66,000
Naupada-Gunupur	(1) Due to heavy rains, there were floods causing breaches on Parlakimedi Light Railway.	—	*Nil*	6,000
Gidni-Jhargram	(1) Due to incessant heavy rain for about 12 hours on the night of 28 June, 1953, bank behind East abutment of bridge No. 94 at mile 103/34 to 104 between Gidni and Jhargram was scoured.	—	From 11-55 hours of 29 June, 1953 to 22 hours on 30 June, 1953.	7,000
Ghatsila-Galudih	(2) Due to incessant heavy rain on 28 June, 1953, a small scour occurred on the bank measuring 15′ × 8′ × 3′ on the slope near bridge No. 56 between Ghatsila and Galudih at mile 137/15-16. A speed restriction of 10 M.P.H. was imposed which was removed on 30 June, 1953 after repairing the scour with ashes. Also a portion of the bank behind the abutment of bridge No. 62 was washed away from the I. C. C. siding at Ghatsila.	—	*Nil*	700

Division District	Property damaged	Cost of damage (approximate)
		Rs.
Howrah	(1) Due to erosion of river Bhagirathi at Dhulian-Ganges, the following damages were done to the railway property, during 1953-4:	
	(*a*) Track between mile 174/8 to 175/11 had to be dismantled	3,00,338 (for items *a*–*f*)
	(*b*) Abutment at Dhulian and Bagmari Bridge washed away	
	(*c*) P. W. D.'s bungalow, 6 units 'M' type quarters and P. W. I.'s godown washed away.	
	(*d*) Goods shed washed away (all removable materials were removed from this shed)	
	(*e*) 30·750 gallons capacity C. I. over head tank dismantled	
	(*f*) 6″ Pipe line dismantled	
Sealdah	(1) A heavy storm with high velocity passed through Halishahar, Santipur, Navadwip, Krishnapur and other stations causing heavy damage.	50,000
Adra	(1) Due to storms, damage was caused to the staff quarters at Ranchi and Adra, as well as to the station building of Ranchi.	3,000

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
	*North Eastern Railway**			Rs.
Dangari-Saikhoa Ghat	Section over flooded 5 times	April to Oct. 1953	53 days	7,100
Makum Jn.-Bara Hapjan	Track sub-merged	12-9-1953	9 hours	10,500
Hansara-Sookerating and Dangari Bridge.	Track sub-merged	12-9-1953	22 hours	
Makum Jn.-Baragolai	Section over flooded	12-9-1953	42 hours	3,000
Mile 568/4—16	Flood water attained rail level	14-9-1953	....	1,000
Siliguri-Neamati and Simalguri Jn.-Sibsagar Town.	Track was sub-merged at places	3-7-1953	43 hours	15,000
Hollong Bridge	Right guide bund washed away	19-7-1953 and 27-7-1953	72 hours	25,000
Domohani-Barnes Ghat	New channel of Tista river formed	1-9-1953	6 days	10,000
Section between Mahanadi-Gayabari.	Heavy land slide	6-9-1953	10 days	10,000
Dittockcherra-Damchara	Heavy slip	14-4-1953	5 days	20,000
		30-5-1953	4 days	7,000
Dhamara Ghat-Goparia	Damages and erosions by floods	7-7-1953	94 days	7,000
Methai-Dauram Madhepura.	Damages and erosions by floods	13-7-1953	3 days	8,000
At Gauhati and Pandu	No. of kutcha staff quarters and service buildings damaged.	10-4-1953	....	14,000
At Pandu	No. of kutcha staff quarters and service buildings damaged.	13-4-1953	....	2,500
At Pandu	No. of kutcha staff quarters and service buildings damaged.	31-5-1953	....	10,000
At Gauhati and Pandu	No. of kutcha staff quarters and service buildings damaged.	13-8-1953	....	28,500
Dibrugarh Makum Jn. and Tinsukia-Charali.	No. of kutcha staff quarters and service buildings damaged.	13-8-1953	....	90,000
Haldibari Sub-Division	Quarters damaged	24-2-1954	....	5,200
Domohani Railway Colony	Roof of certain quarters damaged	7-4-1953	....	50,000
Rangiya Sub-Division	Quarters damaged	..	....	5,000
Mariani	Service and residential buildings severely damaged.	22-2-1954	....	60,000
	Southern Railway			
Gunda Road-Samehalli branch.	Breaches occurred at miles 13/6-7 and 14/4-6 due to heavy rain and floods.	16-4-1953	About 3 hours	750
Tadepalli station area	Due to cyclonic wind and rain the roofing of waiting hall, latrines and staff quarters was blown off. Electricity failed and water was not available for engines.	7-5-1953	About 24 hours	3,500
Bezwada	Due to heavy wind tiled roofs of most of the buildings got damaged.	7-5-1953	About 5 to 6 hours	5,275
Between Malliyala and Dronachellam	Due to heavy rain, track was flooded and breached for about 3 rail lengths and scours also occurred elsewhere.	25-7-1953	About 9 hours	3,900
Between Vanganur and Tadpatri.	Due to heavy rain and floods, the bank at mile 223/16-17 was breached for a length of about 150 ft. beyond Madras and of the abutment of bridge No. 718.	25-7-1953	About 6 hours	1,640

* The following damages were also caused by floods and cyclones on the North Eastern Railway:

(1) *Rapti Bridge No. 41 Between Sahjanwa and Jagatbela.*—The river over flooded its bank and the spill water was washing against the approach banks more severely on the northern side. The down stream guide bund developed seepage. About 200 sand bags and all the quantity of kunker reserve on this bank were utilised to check the seepage from developing.

(2) *Bridge No. 62 Between Khalilabad and Munderwa.*—Due to over flowing of banks by Katarnian river the spill water flowed through the bridge causing an afflux of 14″.

(3) *Elgin Bridge No. 37 at Mile 440/22 Between Gogra Ghat and Chowka Ghat.*—There was a very heavy current at a high velocity in the four spans at Gonda end forming whirls round the piers. The guide banks were not damaged, but the boulder bar 200′ down stream was washed away.

There was slight scar at piers 1, 2, 3 and 4 where crate pitching was done. Higher up stream, near Bahramghat, the pitching of the bank behind the loco well had been washed down for a length of about 200′.

The river Gogra (called Sarju) at Ayodhya Ghat had eroded the bank nearest the Railway staff quarters at Lakarmandi on 30 September, 1953 and due to its undermining the quarters the two semi-permanent quarters No. L/6 and T/5 had to be dismantled.

(4) Owing to heavy rains there had been small breaches on Chandan Choki branch and Mailani-Kauriala Ghat section and these were repaired by using cinder at total cost of Rs. 3,941.

(5) Bank of Phephna-Indara section was partly damaged due to wave wash, necessitating considerable repair to the bank between Chilkahar and Ratnapura.

(6) Due to heavy rains, line between Kerakat and Muftiganj was affected. The bank slipped and had to be repaired.

(7) There were general damages all over the line on the section Aunrihar to Banaras Cantt. and considerable deterioration in running as a result. Most of the section was however restored quickly.

(8) On 20 August 1953, Allahabad City yard was badly flooded owing to excessive rain.

Section affected	Character and extent of damage	Date of damage	Duration of interruption to through communication	Total approximate cost of repairs to damages
	Southern Railway			Rs.
Between Kadiam and Rajahmundry.	Owing to unprecedented floods in the Godavari river and its tributaries the water level in the river at the bridge rose to 64 ft. and flooded Rajahmundry. The station yard and staff quarters were sub-merged as also the track to a length of about 2¼ miles from mile 358/16 to 360/22 after about 4 days, the water began to subside and it was then found that five major breaches had been caused in the embankment measuring between 40′ to 120′ in length. These were closed and through communication restored on 25 August 1953.	15-8-1953	About 11 days	98,000
Between Lachyan and Tadval.	Due to heavy rain, ballast was washed out and the bank scoured for a length of about 100 ft. and to a depth of 1 ft. below sleepers.	15-9-1953	About 6 hours	564
Kolar	Due to heavy rain, the ballast was washed away at mile 22/6-12.	7-10-1953	About 3½ hours	500
Between Venkatagiri and Gudur.	Due to heavy rain, and consequent breaching of an irrigation tank, there was a heavy rush of water towards the track and breaches occurred at mile 212/9-10 to a length of 70 ft. and at mile 214/3-4 to a length of 250 ft. Besides this, bridges Nos. 301, 302, 307, 308 were damaged and minor breaches also occurred at other places.	21-10-1953	About 40 hours	7,700
	Western Railway			
Palghar and Bhilad	Due to excessive rains the north approaches of the Bridge No. 163 at Mile 71/23-24 and Bridge No. 173 at Mile 78/12-13 were breached and down line formation was badly scoured at a number of places.	18-6-1953	From 8-00 hours on 18 June 1953 to 12-00 hours on 20 June 1953 on UP and Down lines, *i.e.* about 76 hours.	50,000
Utran and Sayan	During heavy rains in August 53 water in culvert No. 466 at Mile 173/15-16 rose to 2′-10″ below rail level and when subsided it was found that the north abutment of the Down main line had cracked very badly and the abutment was unsafe.	21-8-1953		6,000
Umalla and Juna Rajuwadia.	During heavy rains the north abutment of the Bridge No. 81 consisting of 1 span 10′-0″ at Mile 27/7-8 was washed away.	3-8-1953	From 15-45 hours on 3 August 1953 to 14-00 hours on 12 August 1953 *i.e.* 8 days 22 hours and 15 minutes.	6,000
Anand and Godhra	Due to the floods in Mahi river communication between Sevalia and Timba Road was interrupted.	18-6-1953 6-8-1953 7-8-1953 16-8-1953	From 23-30 hours on 18 June 1953 to 5-30 hours on 19 June 1953. From 8 hours to 20 hours on 6 August 1953. From 0-10 hours to 8-20 hours on 7 August 1953. From 4-20 hours on 16 August 1953 to 9-00 hours on 20 August 1953.	*Nil*
Gandhidham and Kidianagar.	It rained heavily for about 4 days in the 3rd week of August and earthwork and ballast washed away at several places between Gandhidham and Kidianagar. Extra gangs were employed and earthwork repaired and packing and lifting done.	17-8-1953	Through communication was interrupted for 8 days.	15,000
Kidianagar and Adesar	Due to heavy rains on 17 and 18 the newly laid diversion at mile 129/7 between Kidianagar and Bhutakia Bhimasar (B) was washed away between Kidianagar and Adesar washing away the bank and spitching of bridges, ballast, etc.	17-8-1953	Through communication was interrupted for 8 days.	54,000
Badhal and Reengus	The track between Badhal and Reengus at mile 143/22-23 was slightly damaged due to heavy rains on 27 August 1953.	27-8-1953	25 minutes	2,200
Khijadiya-Veraval	Due to heavy rains line between Amreli and Gavadka at mile 15/14 and Jhar and Chalala at mile 26/11 washed away.	16-6-1953	15 hours	800
Okha-Rajkot	Due to heavy rains line between Kuranga and Bhatia at mile 270/8 to 270/12 and 266/5 to 268/19 washed away.	5-8-1953	5 hours	1,010
Dahinsara Jn.Malia	Due to heavy rains line between Nanibaral and Malia between miles 14/2 to 14/3 washed away.	18-8-1953	30 hours	700
Hadmatia-Jodiya	Due to heavy rains line between Bhadra and Jodiya at mile 20/13-16 washed away.	19-8-1953	47 hours	4,500
Okha-Rajkot	Due to heavy rains line between Aliabada and Jamnagar at mile 201/9-10 washed away.	19-8-1953	12 hours	2,000
Dhasa-Mahuva	The line was interrupted due to heavy flood in Shell diversion at mile 26/13 between Jira Road and Lilia Mota.	16-6-1953 17-6-1953 20-6-1953	13 hours 12 hours 15 hours	*Nil* *Nil* *Nil*
Botad-Ahmedabad	Due to heavy rain line between Bhurki and Hadalbhal at mile 56/6-13 was flooded and through communication interrupted.	11-8-1953 18-8-1953	53 hours 41 hours	*Nil* *Nil*
Surendranagar-Halvad	Due to heavey rains line between Surendranagar Rajsitapur at mile 0/6 to 0/14 washed away.	18-8-1953	24 hours	1,450
	Northern Railway			
Hardwar-Dehra Dun section Mile 26/18 to 27/19.	Due to extraordinary heavy rain on the night of 20/21 July 1953. Protection works gave way and the water topped the railway embankment from mile 26/18 to 27/1 and at mile 27/9. The down stream side of railway bank was eroded at these places while the track at 27/9 was blocked by a lot of debris and boulders.	21-7-1953	446 Dn Goods train 4 hours, 11 minutes.	3,0
Jullundur Cantt.-Hoshiarpur.	Bank at mile 18/1-2 adjacent to local crossing, Hoshiarpur was breached and washed away. The packing underneath the sleepers were also washed away at miles 15/0-1 and 14/3-6.	19-7-1953	19-7-1953 to 23-7-1953	35,00

75. Engineering works.

Central Railway—

Khandwa-Hingoli.—The construction of this 187 mile long metre gauge line was sanctioned on 1 March 1954 at an estimated cost of Rs. 8·9 crores. This line is essential to provide a connecting link between the Northern and Southern Metre Gauge systems the combined mileages of which are 10,113 and 4,933 respectively. This gap now existing between these two big systems has obviously serious disadvantages even in normal times and much more so in times of emergency. The line is expected to be opened to traffic by April 1959.

Eastern Railway—

Restoration of Bobili-Salur Branch.—The restoration of this 10 mile long B.G. Branch was sanctioned on 8 November 1952 at an estimated cost of Rs. 11·14 lakhs and the line has been restored and opened to traffic with effect from 1 February 1954.

The restoration of this line was desired because Salur was the gateway to the area producing rice, fruits, timber, etc.

76. Open line works.

Provision of 5 crossing stations between Chheoki and Jubbulpore.—With the additional traffic of rubber coal for Chola Power House on the Central Railway, necessity was keenly felt for increasing the line capacity on the Jubbulpore-Chheoki Section. This section constituted the bottleneck for this traffic and accordingly sanction to the provision of five crossing stations thereon was accorded at an estimated cost of Rs. 15,60,000 on the 26 February 1954.

Yard Remodelling and improvements at Palanpur station.—The Goods Yard at Palanpur Station of Western Railway was considered inadequate to deal with goods traffic coming from the branch line and transhipped on to the main line trains and *vice versa.* Secondly more traffic was anticipated after the opening of Kandla-Deesa Line. Further, it was considered that considerable amount of shunting operations should be carried out without interfering with the reception and departure of trains. To overcome these difficulties, the work of remodelling the yard and of improving the station at Palanpur was sanctioned at an estimated cost of Rs. 18,07,785 on the 7 April 1953.

Improvements to watering arrangements at Ennore, Southern Railway.—The water supply position in the Madras and Perambur areas having become acute and the necessity to render water supplies for Railway purposes including those of the Integral Coach Factory independent of the Madras Corporation water supply arrangements, being felt, requisite improvements to watering arrangements at Ennore were sanctioned on 30 June 1953 at an estimated cost of Rs. 11,55,000.

Quay wall berth No. IV at Vizagapatam Port, Eastern Railway.—With the export drive for ores and growth of export of iron ore, the two of the three existing berths would entirely be monopolized for ore traffic leaving only one quay berth for general cargo both imports and exports including foodgrains imports. Necessity for a fourth quay wall berth was felt as the import of heavy machinery and capital goods for the shipyard and other industries in and around Vizagapatam, and the possibility of developing this as a rice exporting port from Orissa areas to the south west coast of India were expected. Accordingly a fourth berth was sanctioned on 13 July 1953 at an estimated cost of Rs. 23,93,195.

Conversion of 12 standard I interlocked stations to standard II on the main line between Lucknow and Gorakhpur. North Eastern Railway, costing Rs. 14,51,388.—As the existing signalling installations on this section are nearly 25 years old and are now reaching the limits of their useful life, it has been considered necessary to replace the existing obsolete type of signalling with modern double wire signalling permitting of speeds of 45 M.P.H. and to provide trap points in the loop lines to enable the main line to be isolated. This work was sanctioned on 9 January 1954.

Conversion of 10 standard I interlocked stations to standard II on the main line between Katihar and Gorakhpur, North Eastern Railway, costing Rs. 12,13,449.—The existing signalling installation on this section are about 25 years old and are now nearing their useful life limits. The work of replacing the existing obsolete type of signalling by modern double wire signalling permitting of speeds of 45 M.P.H. and providing trap points in the loop lines to enable the main line to be isolated was sanctioned on 9 January 1954.

77. **Over and under bridges constructed in replacement of level crossings,** *Central Railway.*—During the year 1953-4 an over-bridge at Gwalior was provided in replacement of the existing level crossing and the work of conversion of 1/18′ arch road under-bridge on mile 73/17-18 north east main line, into a skew bridge, and road over-bridge south of Kurla, were in progress.

78. **Important works.**

Champa-Korba coalfields railway, Eastern Railway.—The construction of the Champa-Korba coalfields line, a length of about 24 miles on the Broad Gauge system of the Eastern Railway, required in connection with the development of the Korba coalfields, was sanctioned in October 1953 at an estimated cost of Rs. 96·34 lakhs. The work is well in progress and the line is expected to be completed and opened to traffic in November 1955.

Quilon-Ernakulam construction, Southern Railway.—This 96 mile long metre gauge rail connection will connect Trivandrum with Ernakulam, the necessity for which has arisen due to integration of Travancore and Cochin States into one Union. It was sanctioned on 30 December 1953 and would cost about Rs. 6 crores and its construction has been taken up from the Ernakulam end. The project consists of three section, the first of which, *viz.*, Ernakulam to Kottayam Section, a length of about 37 miles, is expected to be opened to traffic by the end of 1955.

Gop-Katkola construction, Western Railway.—The construction of about 18 miles long metre gauge line from Gop to Katkola was sanctioned on 21 January 1954 and is estimated to cost about Rs. 41·41 lakhs.

This extension of the Kanalus-Gop line will provide a shorter route for the transport of lime stone from the quarries at Ranavav to Mithapur (near Okha) where soda ash, caustic soda and bleaching powder are manufactured. The line is expected to be opened to traffic by September 1955.

Providing water-borne system at Ahmedabad.—With a view to make arrangements to provide flush type latrines and connect the Railway residential premises in the Ahmedabad station area to the municipal sewage system, provision of necessary water-borne sewage system was sanctioned on 30 December 1953 at an estimated cost of Rs. 14,57,133.

79. **Bridge strengthening and protection programme.**—Details of the important items relating to bridges which were strengthened during the year 1953-4 or on which the work was on progress at the close of the year are given below:

Central Railway.—Strengthening the approach banks of Kunnoo river at miles 84/4-6, Gwalior-Sheopur Kalan section, narrow gauge.

Strengthening the foundations and piers of Yamuna Bridge at miles 850/14, Bhimsen-Khairar Section (broad gauge) which are liable to scour.

Eastern Railway.—During the year, 7 bridges on Howrah Division 12 on Asansol, 24 on Dinapur, 2 on Adra, 4 on Cuttack, 2 on Nagpur, 1 on Bilaspur and 1 on Chakardharpur Divisions were strengthened.

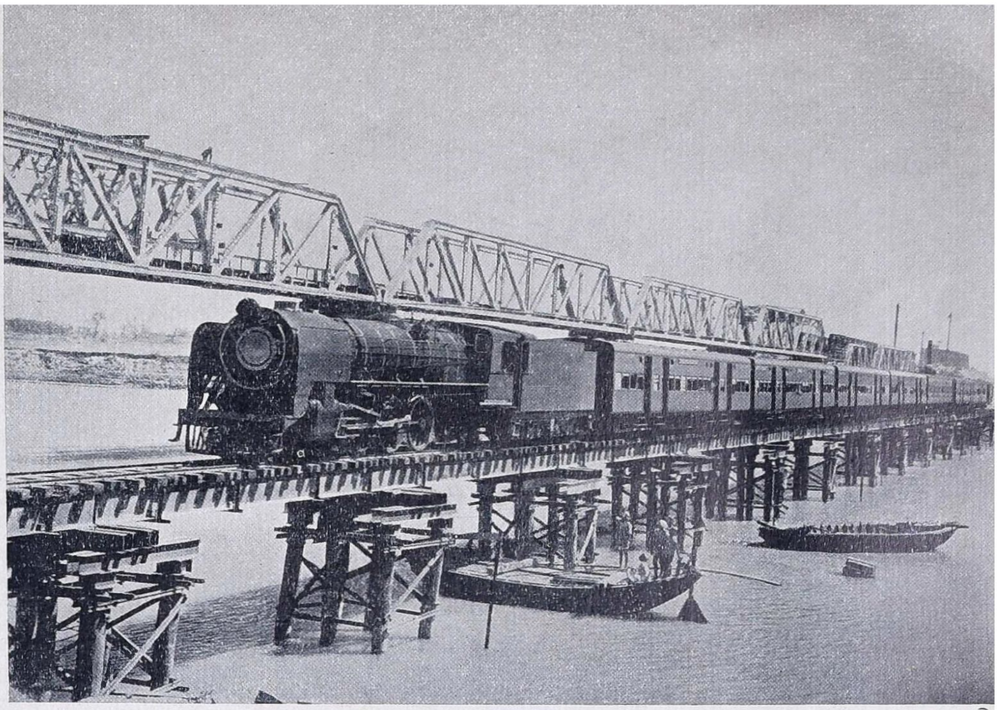
Northern Railway.—Details of important items relating to bridges completed or in progress are:

Providing laterals, bed plates with location strips inside guard rails and C.C. bed stones on certain bridges on Jullundur-Hoshiarpur section on Ferozepur Division.

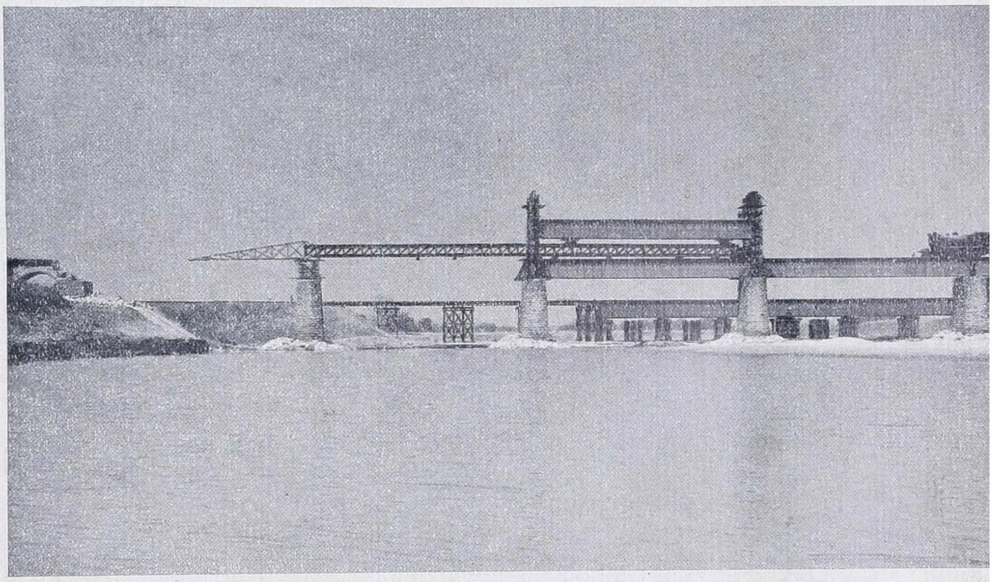
Extension of bridge No. 124 at mile 30/9-10 by one span of 20′-0″ towards Hardwar on Dehra Dun branch.

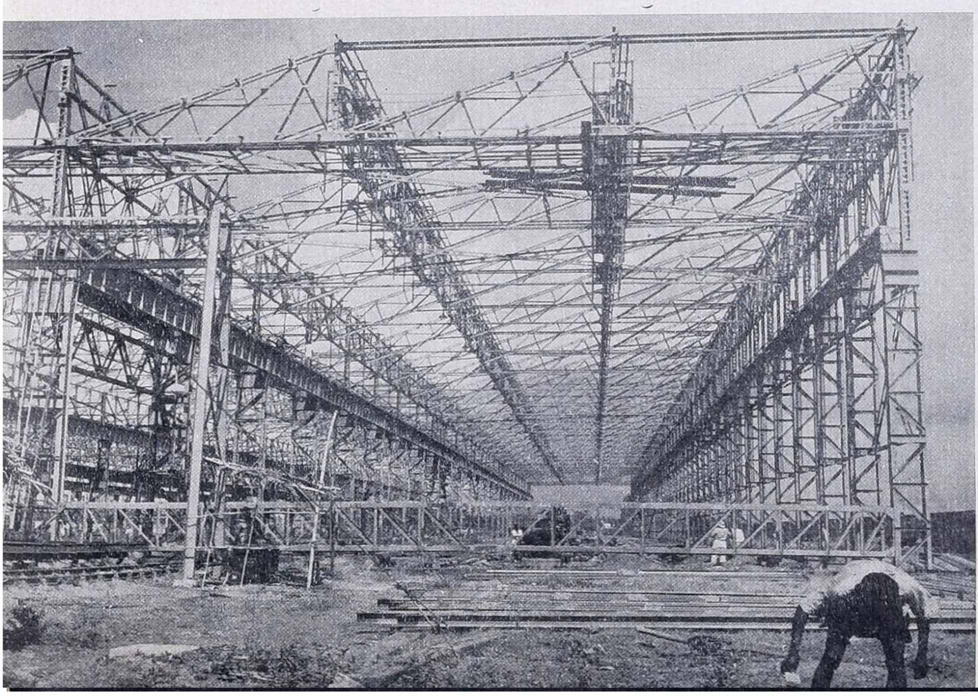
Renewing defective rail girder span, providing bed plates with location strips and lateral bracings on certain bridges on Hussainiwala-Bhatinda section.

Right: RAPTI BRIDGE RE-GIRDERING — GORAKHPUR-GONDA SECTION, NORTH EASTERN RAILWAY SHOWING PILE BRIDGE IN THE FOREGROUND



Right: BONAM BRIDGE RE-GIRDERING ON THE JHARSUGUDA - SAMBALPUR BRANCH





Left: ASSEMBLY SHOP OF THE INTEGRAL COACH FACTORY, PERAMBUR UNDER ERECTION

Rebuilding new pier and renewing existing temporary Calendar Hamilton Span with 2 span of Gaj Bridge No. 214 at mile 53/1-3 on Kangra Valley railway.

Rebuilding of 1 × 15′ cracked girder bridge No. 329 at mile 140/6-7 with C. C. bed blocks and centralised bearings, F. D. Loops.

Western Railway.—Twenty spans of 60′ girders were reconditioned and strengthened to take axle loads upto 20 tons.

The work of providing a high-level bridge over the Mahi river was re-started and erection of steel work on the existing piers was taken in hand. Out of 17 spans of 155′ clear, 14 spans were erected and the work on the remaining was in progress.

Southern Railway.—The work of rebuilding bridges Nos. 517-A at mile 159/12-13, was completed.

Renewing existing 20′ span girders and providing reinforced cement concrete bed blocks in girder bridge No. 1163.

The work of rebuilding bridge No. 517-A at mile 150/12-13, No. 639 at mile 234/5-6, No. 649 at mile 241/4, No. 652 at mile 243/15, No. 655 at mile 245/7, No. 656 at mile 245/17-18 and No. 657 at mile 245/24, was in progress.

North Eastern Railway.—9 spans of 60′ and 38 spans of 20′ were reconditioned and strengthened during the year in Pandu Region. The 20′ span were strengthened by welding additional flange plates at site.

4 bridges on Rangapara North-Tezpur section were regirdered for conversion of this section from narrow gauge to metre gauge.

5 pile bridges comprising of 10 spans of 40′ and 15 spans of 20′ were completed in connection with Madhepura-Murliganj construction.

In the combined engineering and signal workshop at Bongaigaon, 300 tons of steel work for 3,200 L ft. of I. R. S. type platform shelters and 325 tons other structures were fabricated during the year.

Strengthening of the Elgin bridge consisting of 17 spans of 200′ by providing additional diaphragms in the top boom and strengthening the connections between cross girders and strengers were completed.

Girders of 3 bridges were renewed (6 spans of 150′, 4 spans of 100′ and 3 spans of 80′). This resulted in the removal of restriction on YP and YG locomotives on the mainline from Sonepore to Kanpur, Lucknow Junction to Bareilly City and Bhojeepure to Kathgodam.

80. Permanent way renewals and welding of rail joints.—The amount provided for track renewal works for 1953-4 was Rs. 13·10 crores.

The total track renewals carried out during the year on different Railways are given below:

		miles
Central Railway	B. G.	112·5
	M. G.	35·0
	N. G.	4·0
Eastern Railway	B. G.	67·21
Northern Railway	(*a*) Complete track renewals.	
	B. G.	36·45
	M. G.	52·90
	(*b*) Rail renewals.	
	B. G.	20·59
	M. G.	7·31
	N. G.	2·97
North Eastern	No track renewals were carried out during the year under review.	
Southern Railway	B. G.	95·45
	M. G.	115·97
Western Railway	B. G.	41·33
	M. G.	58·25

The welding of rail joints as carried out by the various Railways is given below:

Welding of Rail Joints—

Central Railway—

2 miles of 33 ft. cropped rails of 100 lbs. B.H. track have been welded into panels of 198 ft. on the Igatpuri-Bhusaval section by contract by the 'Thermit' process. Besides, 0·85 track miles of 100 lbs. B.H. track, which

were welded in panels of 66 ft. at the Flash Butt Welding Plant installed in Kalyan is now working and II class 100 lbs. B.H. rails are being welded into panels of 66 ft. and 99 ft. after cropping the bettered ends. In addition, new 99 lbs. R.F.F. rails are also being welded into panels of 84 ft. and 78 ft. These will be used in the Bombay-Kalyan-Igatpuri, Kalyan-Poona and Amla-Itarsi sections on the Main Line. A second Flash Butt Welding plant originally proposed to be installed at Bhusaval is now being mounted on wagons to provide a mobile unit ; this work is in progress.

Northern Railway—

The total number of joints welded by Flush Butt Welding Plant at Rosa and used on Lucknow-Moradabad section—1,279 Nos. Total number of joints welded by Thermit process over bridges and their approaches on Delhi Division—1,519 Nos.

Western Railway—

6,285 rail joints were welded over a total section of 49 miles on this Railway.

81. Wireless communication on Railways.—The performance of the Wireless Communication on Railways remained very satisfactory during the year under review. The duplex Radio Telephony system has now been extended to Jubbulpore and Bhusaval on Central Railway and Bhavnagar and Gondal on Western Railway. This system was well used during the year under review and proved very satisfactory.

Two new wireless links, one connecting Mysore, Hubli, Guntakal, Bangalore City and Pakala and the other connecting Madras, Hubli, Guntakal, Mysore and Bangalore City on the Southern Railway have been opened. One inter-Railway wireless link has also been opened connecting Calcutta, Katihar, Pandu, Siliguri and Alipurduar Stations on the Eastern and North Eastern Railways to clear additional traffic to and from Pandu.

Mobile transmitting and receiving sets have been provided on Central, Southern and Western Railways for emergency purposes. These were brought into use by the Central Railway in connection with Kumbh *mela* facilities and by the Southern Railway in connection with the recent floods, cyclones, accidents, etc.

Wireless transmitting and receiving stations have been provided in the Annual Inspection Saloons on Eastern, North Eastern, Southern and Western Railways in order to maintain continuous contact with the fixed wireless stations in the area throughout the journey.

82. Improvements to line tele-communication on railways.—The normal working of the land line communications on the Railways remained satisfactory during the year under review except certain interruptions on North Eastern Railway due to the floods. The standard of efficient communication was, however, maintained even on North Eastern Railway with the employment of additional capacity of the existing wireless sets on that Railway. More old and worn out train control and telegraph equipments on many sections on Railways have been replaced by new and the latest type of equipments to improve efficiency.

In order to meet the increased telegraph and telephone traffic, the following additional Administrative Trunk, Train control and Telegraph Traffic circuits or the changes in the existing circuits have been made during the year.

Central Railway.—A new control alignment along the 'New Down Main' line between Budni and Barkhera stations was provided to facilitate contact with the section controller in case of an emergency.

Eastern Railway.—(i) A new Deputy Control circuit with ten intermediate stations has been opened on Raipur-Vizianagram section to deal with extraneous traffic and thereby releasing the section control circuit to be utilized purely for train operation work.

(ii) Adra-Asansol control circuit has been extended to Garhdhurubeswar and Anara to facilitate controlling of train operation.

(iii) Railway Tele-communication net work has been extended to (a) Raipur and (b) Dehri-on-Sone stations by bringing into commission the two undernoted pair of lines wires rented from the P. & T. Department:

(*a*) Bilaspur to Raipur.
(*b*) Moghalsarai to Dehri-on-Sone.

Northern Railway.—(i) The work of providing control between Bikaner-Jamsar and Bikaner-Rewari was completed and the working of the trains on control system on these sections has been introduced.

(ii) Train wire has been provided between Chunar and Robertsganj in Allahabad Division.

(iii) Train wire has been provided on Madhoganj-Unao section in Moradabad Division.

North Eastern Railway.—Additional Trunk Lines were brought into use on the following sections:

(*a*) Gorakhpur-Lucknow.
(*b*) Gorakhpur-Sonepur.
(*c*) Kanpur-Fatehgarh.
(*d*) Lumding-Mariani.

Additional control circuits were completed on the following sections:

(*a*) Samastipur-Khagaria (*via* Hasanpur Road).
(*b*) Burhwal-Sitapur.

Southern Railway.—(i) The Bangalore City-Mysore-Arsikere-Hindupur Section Control Circuit came into service on the erection of 72 miles of wires by the Posts and Telegraphs Department.

(ii) The Section and Deputy Controls from Madras which were originally terminated at Bangalore Cantonment have been extended to Bangalore City thereby connecting the Control Offices at Rayapuram and Bangalore City directly to promote co-ordination in work.

The following new telephone exchanges or changes in the existing exchanges have also been carried out during the year:

Central Railway.—A 100 line Automatic strowger type exchange was installed at Jubbulpore in replacement of 50 line manual Exchange Board to improve telephone facilities.

Eastern Railway.—(i) In connection with the Ganga Bridge Project two Exchanges have been installed at Camp Office Hathidah and Mokameh Ghat Camp.

(ii) New Railway Exchanges have been installed at Sealdah and Ranaghat and are to be brought into commission shortly.

Northern Railway.—An additional 30 line PBX was installed in Baroda House, New Delhi.

North Eastern Railway.—Telephone Exchanges were installed at the following places:

Fatehgarh, Kanpur (Anwarganj) and Chupra.

Southern Railway.—(i) A 25 line automatic exchange has been provided at Tondiarpet Marshalling Yard to replace the worn out 20 line exchange.

(ii) The 50 line Public Exchange at Adam's Park, Madras has been replaced by a two-position 100 line Multiple Board to cope with increased demand.

Western Railway.—At Ajmer and Gondal Regions, 50 line and 25 line automatic exchanges were installed.

Portable control telephones have been provided on more passenger trains in addition to their provision on all main and express trains running on controlled sections, in order to establish communication with the control office by tapping the control lines in emergencies or accidents.

More flag and halt stations on controlled sections on various Railways have been provided with control telephones in order to have communication with the adjacent block stations.

The scheme for providing public address equipments at important stations to relay information to the travelling public about the arrival and departure of the trains has been extended to further stations.

CHAPTER V

MECHANICAL AND ELECTRICAL ENGINEERING AND ROLLING-STOCK

83. Renewals and additions to equipment—

Locomotives.—The number of new standard locomotives ordered and placed on line during the year is as follows :

	Broad	Metre	Narrow
Number ordered	500	275	18
Number placed on line	63	89	18

Out of the 500 broad gauge locomotives, an order for 100 WG Class Standard Goods Locomotives was placed on the Chittaranjan Locomotive Works and the remaining 400 locomotives, including 20 diesel locomotives, were ordered from the following countries :

Type & No. of locos. ordered	Country of manufacture.
75 WG Class	Japan
100 " "	Germany
60 " "	Austria
25 " "	Italy
120 WP "	Canada
20 Diesel Shunting	Germany
400	

Out of the 275 metre gauge locomotives, 50 YG Class Standard Goods Locomotives were ordered on Tata Locomotive and Engineering Co., 150 YP Class Standard Passenger Locomotives from Germany, and 75 YG from Japan.

18 narrow gauge locomotives were ordered abroad, 10 being from Japan and 8 from Germany.

All the locomotives ordered abroad are expected to be received before 31 March 1956 the end of the first 5-year plan period.

Coaching Stock.—(*a*) In addition to utilizing all the available carriage building capacity in railway workshops orders were placed on manufacturers for the supply of 300 broad gauge and 224 metre gauge coaching vehicles. The distribution of these orders for coaches was as follows :

(Figures in units)

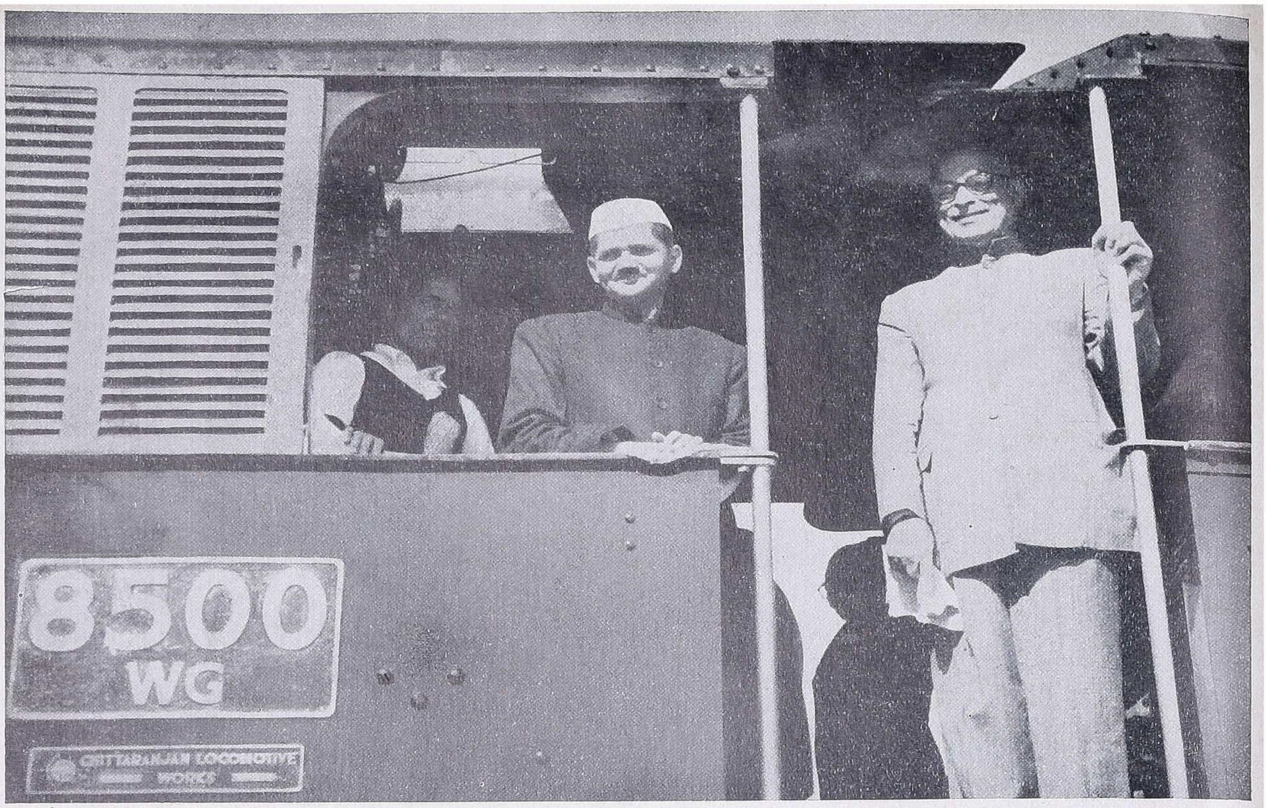
Indigenous	Broad	Metre
All steel passenger coaches (III Class) fully furnished	150	—
4-Wheeler Motor and parcel vans	100	—
From abroad		
Unfurnished coaches	50	200
Rail cars	—	24

(*b*) 426 broad gauge, 402 metre gauge and 41 narrow gauge coaching vehicles were placed on line, details of which are as follows :

(Figures in units)

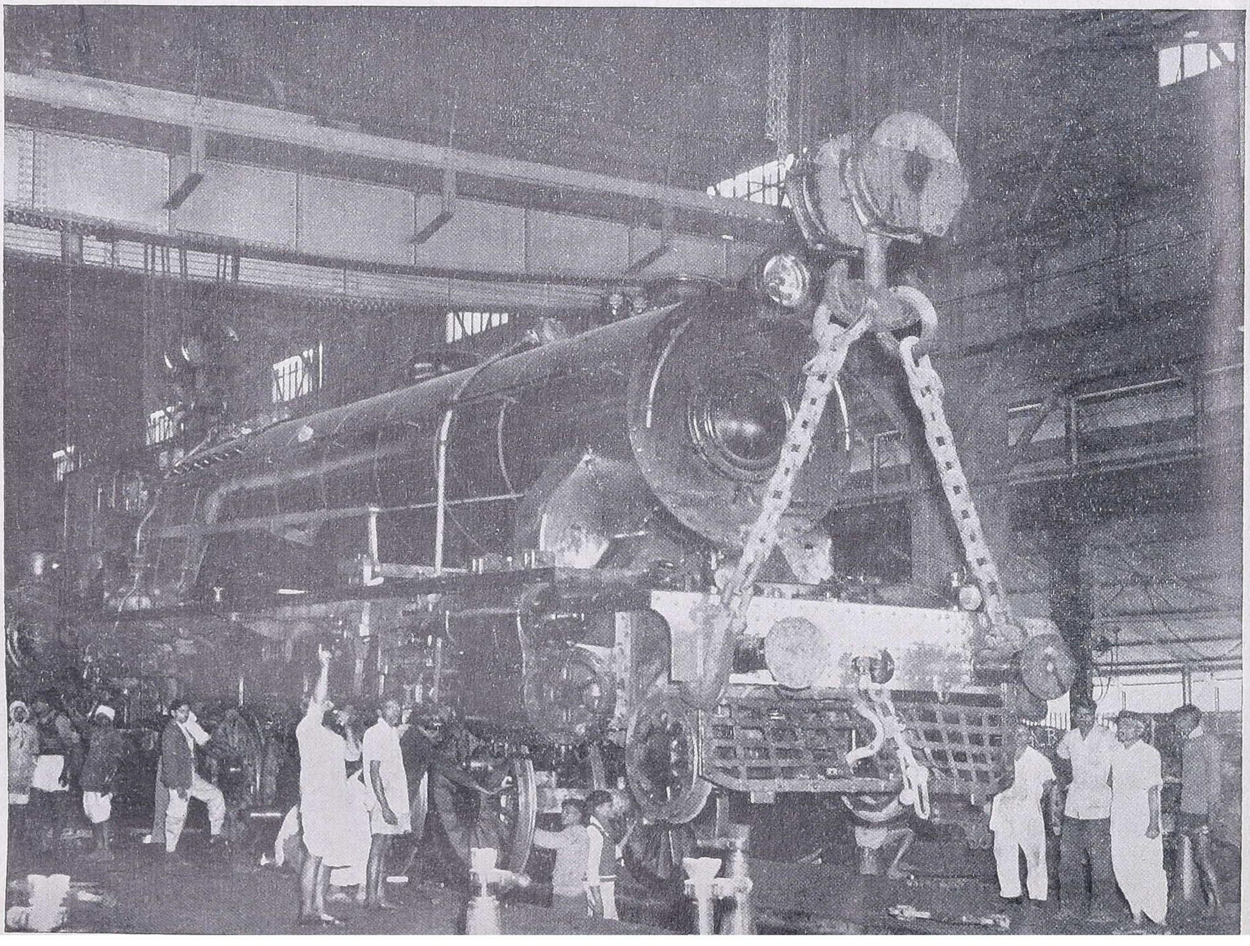
	Broad	Metre	Narrow
Manufactured in railway workshops			
Passenger coaches — Air-conditioned	21	—	—
Passenger coaches — Upper Class	54	18	1
Passenger coaches — Lower Class	125	131	30
Other coaching vehicles	75	38	10
Manufactured at Hindustan Aircraft Ltd.			
All steel passenger coaches (Class III)	134	—	—
Constructed by other Indian wagon manufacturers			
All steel passenger coaches (Class III) furnished in Eastern Railway and North Eastern Railway workshops	9	8	—
Motor and parcel vans	2	—	—
Prototype Class III coach	1	—	—
Imported			
All steel-coaches of integral design from Switzerland	5*	—	—
All steel-coaches *ex*-Germany	—	207*	—

NOTE.—*These figures include 1 Schlieren and 87 M.A.N. coaches which were received in 1952-3 but were omitted to be shown in that year's Annual Report.



Above: MINISTER FOR TRANSPORT OF RAILWAY WITH CHIEF MINISTER, WEST BENGAL DRIVING THE 100TH LOCOMOTIVE MANUFACTURED AT CHITTARANJAN

Below: WHEELING OF LOCOMOTIVE INSIDE THE KHARAGPUR WORKSHOPS



Goods wagons.—The number of wagons ordered and placed on line during the year is given below:

(Figures in terms of 4-wheelers)

	Broad	Metre	Narrow
(i) Number ordered	6,400	4,980	92
Indigenous	6,190	840	—
Foreign	210	4,140	92
(ii) Number placed on line	6,697	1,211	324
Indigenous	6,697	89	—
Foreign	—	1,122	324

The number ordered included 5,400 broad gauge, 4,000 metre gauge and 88 narrow gauge general service wagons, 50 broad gauge and 680 metre gauge tank wagons and 950 broad gauge, 300 metre gauge and 4 narrow gauge special types of wagons.

Numbers placed on line comprised:

(In terms of 4-wheelers)

	Broad	Metre	Narrow
General service wagons	6,192	808	300
Petrol tank wagons	150	18	4
Other special types	355	385	20
	6,697	1,211	324

The requirements of wagons have been in excess of the indigenous manufacturing capacity. Orders to the extent of 210 broad gauge, 4,135 metre gauge and 92 narrow gauge wagons were, therefore, placed abroad to supplement the supplies from indigenous sources.

Technical Co-operation Mission Aid.—Reference may be made here to the assistance expected to be obtained in regard to rolling-stock for rehabilitation under the Indo-U.S.A. Technical Co-operation Mission Aid Programme for 1953-4. Of the total amount of the Aid for India, a sum of $20 million has been allotted to the Railway Ministry and the number expected to be obtained is 100 WG locomotives, 2,500 'O' type broad gauge wagons and 2,500 'MC' type metre gauge wagons urgently needed. Merging this with the Aid Programme for 1954-5, the T.C.M. authorities have decided to distribute the orders among various manufacturers in different countries as follows. As regards locomotives, 50 were allotted to Baldwin Lima Co., U.S.A., and 25 each to Hitachi, Japan and Krupps, Germany ; as regards wagons, U.S.A. is to supply 3,300 with wheels and axles, while, without wheels and axles, Simmering Graz, Austria, Kawasaki, Japan and Cantieri Reuniti, Italy would supply 1,000 each ; Metro-Cammel, U.K. have been allotted 3,430, and Sumitomo of Japan would be supplying 10,860 wheels and axles Final information regarding the decisions reached by the T.C.M. authorities is expected in the course of the next year.

84. Locomotives.—The average tractive effort per steam locomotive on Government Railways during 1953-4, as compared with 1952-3, shows an increase on both broad and metre gauges. The average tractive effort for diesel-electric locomotives and electric locomotives on both broad and metre gauges remained the same as during last year. The detailed figures for the different classes of locomotives are shown in the following table:

Average tractive effort per engine in lbs.

Locomotives	Broad gauge		Metre gauge	
	1952-3	**1953-4**	1952-3	**1953-4**
Steam (including Sentinel and Clayton types)	28,616	**28,929**	16,483	**16,871**
Diesel-electric	26,965	**26,965**	7,420	**7,420**
Electric	31,015	**31,015**	10,400	**10,400**

85. Manufacture of boilers and locomotives in India.—A fourth order for 100 WG Class Broad Gauge Goods Locomotives was placed on the Chittaranjan Locomotive Works during the year, this was in addition to 257 WG Class Locomotives already ordered. During the year the Chittaranjan

Locomotive Works manufactured 64 WG Class Locomotives compared with 33 completed during 1952-3. This brings the total deliveries of WG Locomotives from Chittaranjan to 121.

There has been a progressive increase in the percentage of components produced at Chittaranjan Locomotive Works rising to an average of a little over 80 per cent. A few proprietory fittings and parts, which it would not be economical to produce in the quantities required, are purchased mostly from indigenous sources. Only about 90 components, out of a total 5,335 in a complete locomotive, are being imported. These include large sizes of boiler plates and boiler tubes not yet produced in India, vacuum brake ejectors, main bar frame, cast steel cradle castings, head light equipment, etc. There are, however, plans for the manufacture in India of most of these fittings.

An order for 50 YG Class Goods Locomotives was placed on Messrs. Tata Locomotive and Engineering Co., during the year. Out of the previous orders for 50 YG and 100 YP, Tata Locomotive and Engineering Co., had delivered 10 YG and 12 YP during the year bringing the total deliveries to 50 YG and 12 YP or a total of 62 locomotives.

Boilers.—No new order for boilers was placed on Messrs. Tata Locomotive and Engineering Co., during the year. The outstandings on 31 March 1953 against the previous orders on the firm amounted to 180, out of which 31 boilers were delivered during the course of the year.

86. Improvements to sick lines and carriage and wagon depots.—The railways continued to attach importance to providing improvements in workshops, running sheds and sick lines.

Among the major schemes which were initiated or are in progress are the remodelling of Gorakhpur workshops which on completion will go a long way in making the North Eastern Railway self-sufficient in regard to overhaul of their rolling-stock. Some capacity was also developed at Jagadhri for the overhaul of carriages and wagons belonging to the Northern Railway. The Central Railway took steps to increase the outturn for their Carriage and Wagons Workshops at Jhansi.

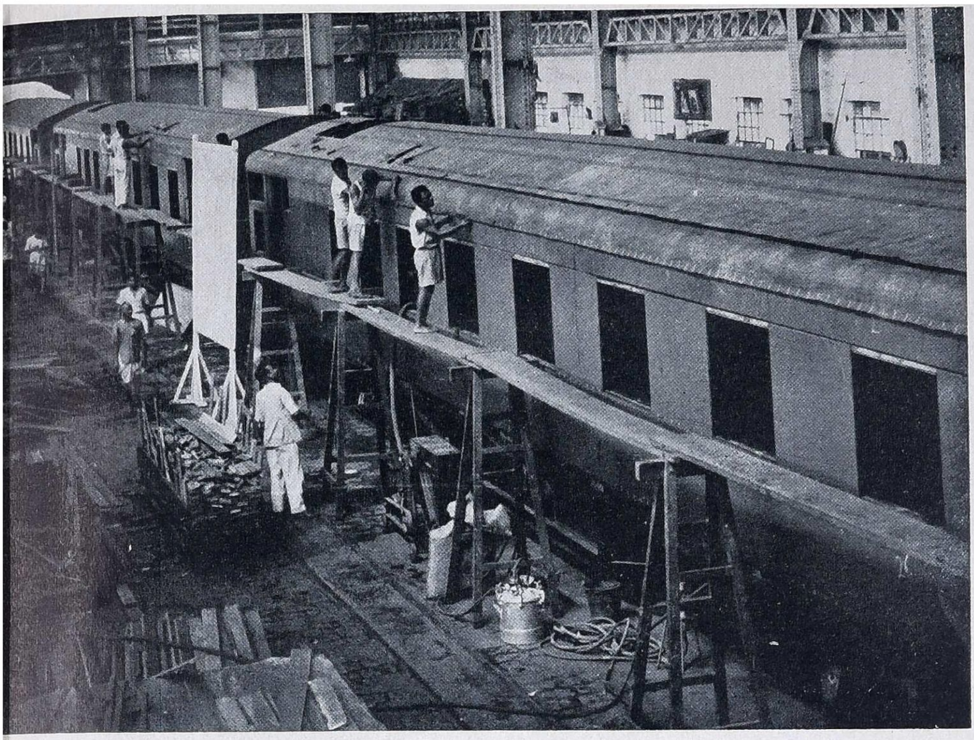
87. Fitting of automatic vacuum brakes and pipes to metre gauge stock during the year and future programme.—Progress in fitting of automatic vacuum brakes and pipes to metre gauge stock was restricted due to non-receipts of material and equipment. Special steps have been taken to expedite the work and it is planned to complete it by March 1957.

88. Repairs to locomotives in railway workshops and running sheds.—As compared with figures for 1952-3, the average number of engines under or awaiting repairs in workshops and running sheds on the broad and metre gauges registered a slight increase as shown by figures summarized in the following table:

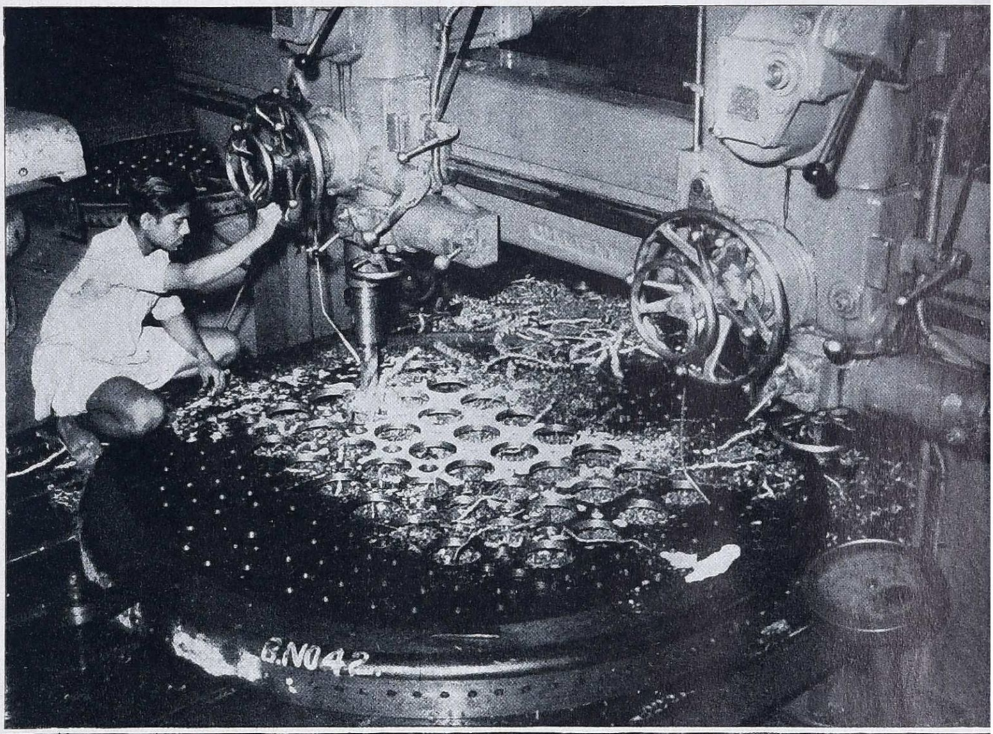
AVERAGE NUMBER OF LOCOMOTIVES UNDER OR AWAITING REPAIRS

Gauge	Year	In mechanical workshops		In sheds and transportation shops	
		Number	Percentage to average total no. on line	Number	Percentage to average total no. on line
Broad (Steam)	1952-3	274	5·24	663	12·7
	1953-4	**282**	**5·44**	**654**	**12·6**
Metre (Steam)	1952-3	182	6·76	277	10·3
	1953-4	**225**	**8·10**	**290**	**10·4**

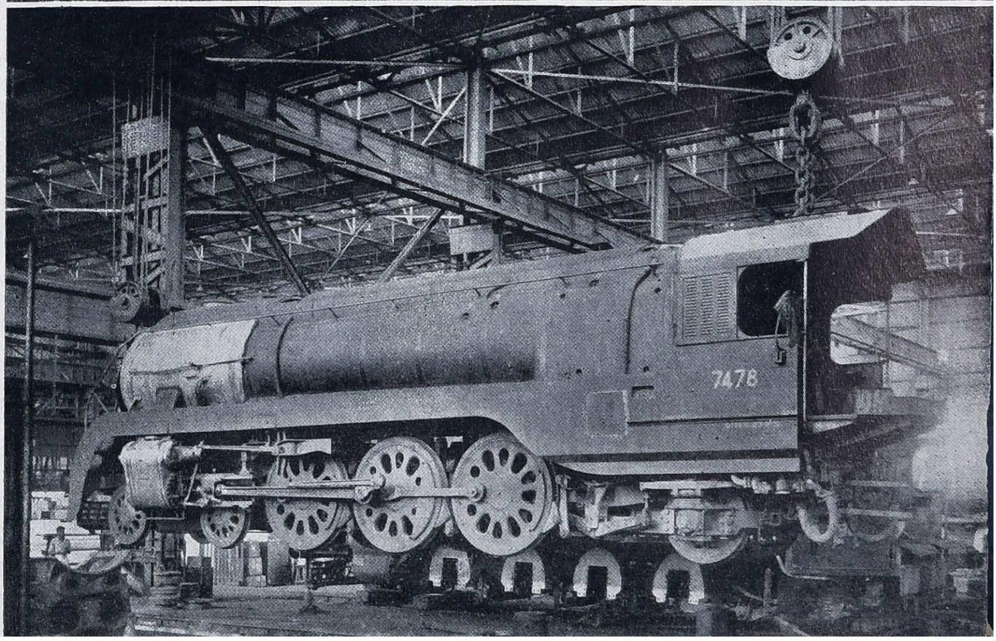
Although the average figures for metre gauge for 1953-4 show a deterioration when compared with those of 1952-3, there was a progressive improvement in the total percentage of locomotives under repairs, the figures being reduced from 19·6 in June 1953 to 17·0 in March 1954. The total number of both broad and metre gauge locomotives overhauled in mechanical workshops also showed a considerable improvement.



Left: FINISHING OF ROOFING AND EXTERIOR OF AIR-CONDITIONED COACHES UNDER CONSTRUCTION AT MATUNGA WORKS



Right: BOILER TUBE PLATE BEING DRILLED—CHITTARANJAN LOCOMOTIVE WORKS



Right: LIFTING OF A W. P. LOCOMOTIVE, LOCO WORKSHOPS, PERAMBUR

CHAPTER VI

RESEARCH AND STANDARDIZATION

A. RESEARCH ORGANIZATION

89. Research headquarters building at Lucknow.—The headquarters of the Research Directorate at Lucknow moved into its own new administrative and laboratory building in August 1953. Between September and December 1953 the rolling load fatigue testing machine and the Photo-elastic apparatus were installed and the electrical laboratory equipped. The equipment of the bearing testing and rubber fittings testing laboratories, though ordered, has not yet been received.

On 12 February 1954, the Railway Testing and Research Centre was formally inaugurated by Pandit Govind Vallabh Pant, Chief Minister of Uttar Pradesh and kept open to visitors. The functions and activities both in the static laboratories and on the mobile testing units were explained to them.

90. Track research—

(a) *Track loads and stresses.*—The investigations on the determination of the flange forces exerted by the 1926 Standard and the new Standard Pacific locomotives and by the earlier BESA engines on 1 in $8\frac{1}{2}$ all-steel turnouts were continued. The flange forces produced were recorded by electro-magnetic weighbars coupled to oscillograph equipment and the deflection of the track was measured by a special track movement recorder developed by the Centre. Comparative trials were also carried out on a 1 in 12 and a 1 in $8\frac{1}{2}$ turnout with new wooden sleepers and on a 1 in $8\frac{1}{2}$ layout with old wooden sleepers in the Lucknow yard. In the 1 in $8\frac{1}{2}$ steel layout tests, the effects of slack gauge in the track and slack clearances in the locomotive were studied separately and in conjunction. The trials on BESA locomotives are still to be completed. But interim results have shown that—

(i) the location of the maximum flange forces was almost invariably on the straight portion of the turnout about 2 feet in advance of the switch. Between the switch and the crossing, the flange forces fell off slightly but again reached a peak at the heel of the crossing where the reverse curve commenced ;

(ii) track deflections on both the steel and wooden layouts were elastic and of the order of 1/8″ and 3/8″ respectively ;

(iii) on a 1 in $8\frac{1}{2}$ turnout, the maximum-flange forces appeared at speeds between 15-20 miles per hour and tended to decrease at higher speeds. On 1 in 12 turnouts no such critical speeds range was discernible up to 20 m.p.h. Contrary to common notions the maximum flange forces within the speed limits of the tests on the curved portion were found to act on the inner rail of the turnout instead of the outer ;

(iv) the reduction in the flange forces due to slack gauge of the track was slight. On the other hand, slack gauge in the track together with slack clearances in the locomotive wheel assemblies increased the flange forces.

Trials were concluded on the determination of flange forces set up by unaltered WP locomotives on 6° main line curves. In general the flange forces recorded were lower than those on 1 in $8\frac{1}{2}$ turnouts.

The final series of tests on the determination of stresses induced in rails with different types of sleeper supports at rail joints were started.

(b) *Rail welding.*—Fatigue testing of welded joints were carried out on the rolling load fatigue testing machine with rails welded by the Flash Butt welding process at the rosa welding plant and with different types of normalising heat treatment. Thermalite and Secheron welded rails were also tested along with the parent rails for each type of joint. The Flash Butt welds gave the highest percentage strength as compared with the parent rail but there was still room for improvement in the fatigue strength. The erratic

results obtained with normalised welds showed that the form of post-heat treatment needed improvement. The welding technique and the layout schedule of the process are under close examination and ways and means for improving the quality of Flash Butt welded rails are being devised.

(c) *Development of suitable concrete block type sleepers for railway track.*—A start has been made on the manufacture of reinforced concrete block sleepers. Methods are being studied to intensify the rate of manufacture and, in collaboration with the Central Standards Office for Railways, the design is being simplified. Trials with the sleepers manufactured at the Lonavla Sub-Centre are being started on both the broad and metre gauges.

91. Building research—

(a) *Foundations for buildings on black cotton soil.*—The work on the evaluation of properties of black cotton soil in foundations has been continued and protracted investigations on the shrinkage and swelling pressures are under study in the laboratory. In this context site investigations and laboratory analysis on foundations for structures projected on the railways were conducted and valuable advice rendered.

(b) *Trials on low cost housing.*—Laboratory studies on the suitability of different types of construction materials continued. Seasoning and durability tests carried out so far show that cinder and coal ashes as available at loco sheds and at wayside stations are quite suitable for the making of cinder concrete. Building blocks (18″ × 9″ × 3″) for wall panels have been manufactured and have so far stood up well even in localities subject to very heavy rains. The Central Railway has undertaken the construction of a block of 7 units "A" type quarters to specifications drawn up by the Lonavla Sub-Centre. The construction will comprise cinder concrete building blocks in wall panels with built-in-situ columns made of pre-cast special hollow cinder concrete blocks through which steel reinforcement will be threaded and the hollows filled in with plain concrete. The columns will support pre-cast concrete beams. The roofing will be built up of pre-cast cinder concrete jack arch elements without reinforcement.

Studies on the evolution of cheap rafters in light-weight cement concrete, with a reinforcement of pre-assembled small sized rodding, are also under way. Several integral plasters, suitable in particular for cinder concrete building blocks, are on trial.

(c) *Development of a portable hut.*—A design, capable of repeated dismantling and re-erection without damage and of packing in small units which can be handled manually has been developed. A prototype is under manufacture. A mineral slag wool insulation developed by the Shri Ram Research Institute, Delhi, will be tried out for the insulation of its roofing.

(d) *Concrete mix design.*—Over 200 compression tests on works cubes made from samples of fine aggregates were made and design data for concrete mixes furnished to railways. In some cases railways were advised against the use of certain aggregates and in other suggestions were made for overcoming the natural defects in the raw materials available locally.

(e) *Use of bamboo as reinforcement for unimportant R. C. structures.*—By bituminising bamboo in the presence of heat it has been possible to reduce the absorption of water after 48 hours of immersion to between 3 to 4 per cent by weight. Attempts have also been made, with some measure of success, to coat the surface of split bamboos with sand, after bituminisation in order to increase the bond strength.

92. Soil mechanics research—

(a) *Soil tests.*—During the year, 247 soil samples were received out of which 185 were tested completely. In all 951 tests were carried out. Their breakdown in relation to the type of investigation is as follows:

	No.
(i) Foundation problems	325
(ii) Stability of embankments and cuttings	356
(iii) Comparison of shear strength of soils in different parts of the country	65
(iv) Soil stabilization	8
(v) Research on black cotton soil	59
(vi) Miscellaneous tests including corrosion of rails, suitability of soil for brick burning, etc.	138

(b) *Design of foundations.*—Out of the various problems referred to the Centre, on which advice was given to railways or other Government Institutions, the following deserve to be specially mentioned:

(1) Foundation for multi-storeyed building near Dock Yard Station (Bombay), Central Railway, bearing capacities were determined on samples of soil taken from open pits ;

(2) Foundation for road under-bridge on Kurla-Trombay Construction, Central Railway, the soil was found to be very poor clay with weak consolidation characteristics. As good rock was encountered within 12′ from ground level, open foundations were recommended ;

(3) Investigations in connection with the Kandla Port, soil analyses were conducted to supplement the method of determining the length of piles by a sounding apparatus attempted for the first time in the country ;

(4) Foundation for Railway Buildings in the Howrah area, Eastern Railway, safe bearing capacity of the soils were determined from samples of soils received ;

(5) Foundation for the Beryl House, Bombay, Central Railway, determination of safe bearing capacity of the existing foundation. Soil analysis showed that the addition of another storey to the building would not overload the foundation soil ;

(6) Foundation for multi-storey railway buildings at Perambur, Southern Railway, highly compressible soil was located below the surface strata. Pile foundations were therefore recommended.

(c) *Design of embankments.*—Based on soil analysis, recommendations for the design of new embankments on the stabilization of existing defective formations were made of which the most notable are:

(i) Investigations for the design of the guide bunds of the Ganga Bridge ;

(ii) Defective cutting No. 2 on the Budni-Barkhera Section, Central Railway ;

(iii) Defective banks and cuttings on the Thull Ghats, Central Railway ;

(iv) Unsuitable bank at Mile 15/11-14 between Khanapur-Desur, Southern Railway ;

(v) Defective banks and cuttings on the Howrah-Burdwan chord and Burdwan-Bandel loop, Eastern Railway.

(d) *Miscellaneous.*—Of the other problems tackled at this sub-centre may be mentioned the following:

(i) Determination of soil constants from the coarser fractions of soils ;

(ii) Relationship between the plasticity index and activity of the indigenous clayey soils ;

(iii) Development of a method for the determination of clay content of soils by sedimentation in a solution of sodium chloride. The results obtained proved satisfactory and were published in a monograph ;

(iv) Ballast penetration in embankments.—On the lines of experience of the British Railways, local investigations showed that crusher dust is a suitable subgrade carpet ;

(v) Determination of the angle of internal friction by mechanical analysis of soils.

93. Locomotive research—

(a) *Tests on the locomotive as a power unit.*—Two sets of trials were conducted. One was with reference to the comparative performance of two types of devices for providing additional heating surface in the firebox of standard locomotives. Dynamometer trials were conducted on 2 WP/P

locomotives, one fitted with two security arch tubes and a thermic syphon and the other fitted with security circulators. However, up to the time of the trials, sufficient comparative service data on locomotives fitted with the two different devices was not available to afford clear testimony of reduced scale formation on the evaporative heating surfaces of the boilers. No conclusion can, therefore, be ventured at this stage on the comparative merits of the two devices.

The second trial related to the thermal insulation of locomotive boilers. Trials were initiated during the winter months of 1954 on a W.G. locomotive the boiler of which was lagged with sprayed limpet asbestos with the object of ascertaining the degree of reduction of heat dissipation from the boiler to the atmosphere. From the theoretical aspects of the problem a lagging with good insulation properties should bring about a reasonably substantial saving in fuel. The trials will be repeated in the summer months in the hottest part of the country to assess whether the overall saving in fuel realized in all seasons is worth the cost of application and maintenance of such insulation under normal service conditions. The winter trials have indicated a saving of about 3 per cent in fuel consumption.

Tests of the locomotive as a vehicle covered two sets of trials, one on the broad gauge and the other on the metre gauge.

Tests were conducted on a MAWD (metre gauge wartime type) locomotive to determine the safe operational speeds for this locomotive. It was proposed that till such time as the modifications recommended were carried out and further oscillation trials undertaken, the existing speed restriction of 25 miles per hour could be relaxed somewhat under certain conditions. Similarly a relaxation in speed was recommended for these MAWD locomotives, supplied after 1948, which already had laminated spring suspensions.

94. **Carriage and wagon research.**—Preliminary static and dynamic on-the-run tests were carried out on a newly designed coupling gear for IRS wagons. The object of the new design was to permit the haulage of longer trains than hitherto by the more powerful modern standard locomotives in order to exploit the existing line capacity to the maximum. Owing to faulty manufacture, the new design did not prove to be superior to the existing standard. Tests have been planned with coupling sets manufactured under better metallurgical control.

95. **Fuel research.**—(*a*) Service trials on feed water heaters were continued on the railways under the supervision of the Centre. The method of adjustment and maintenance of the equipment was demonstrated to the drivers and the shed staff on railways to enable them to gain familiarity with this equipment.

96. **Chemical and metallurgical research.**—Chemical and metallurgical research covered the following main activities :

(i) investigations into material failures ;
(ii) development of indigenous products to replace imported ones ;
(iii) participation in the standardization and development conventions ;
(iv) metallurgical inspection of components.

(*a*) Investigations into material failures included amongst others :

(i) failures of axle of WP engines which brought to light cases of inter-crystalline penetration of copper resulting in fatigue cracks in the axle journal ;
(ii) abnormal wear of rails resulting from shelling, scabbing, etc. ;
(iii) corrosion of rails in various regions including a comparative study of foreign rails with those of indigenous origin ;
(iv) examination of boiler plates more than 60 years old from North Eastern Railway and wagon steel plates from abroad which showed very little corrosion ; and
(v) drawbar failures.

(*b*) Trials on the development of indigenous products covered airdrying and stoving enamels and varnishes from cashew nut shell and bhilawan oil insulating compositions from mineral wool made from foundry slag, formulation of bituminous emulsions for protection against corrosion, etc., effective sealing pastes from cashew nut shell oil and waste rubber, heat setting cements, etc.

(*c*) As in previous years, metallurgical inspection of components manufactured by Chittaranjan Locomotive Works and Tata Locomotive and Engineering Company Limited, Tatanagar, was continued. Methods of sampling and testing in the foundries and the forge shops were rationalized. Suggestions were given regarding method of heat-treatment of springs. Preliminary experiments were carried out on the age-hardening of welded mild steel plates.

(*d*) During this period, the fourth and fifth annual meetings of the Indian Railways Chemists and Metallurgists Committee were held. The fourth meeting recommended trials with spheroidal graphite cast iron shell for carriage and wagon bearings, discussed sand mixtures suitable for various type of foundry work, amendments to various specifications, heat-treatment of crane chains, etc. At the fifth meeting, specifications for boiler steel and limestone for cupola use were drafted and possibilities of amending the Indian Standard Specifications for superheat cylinder lubricating oil were studied. Centrifugal casting machines were recommended to be purchased by various railway workshops for the manufacture of piston and piston valve rings and suggestions were made regarding carriage cleaning compounds for external and internal use.

(e) *Water softening.*—The Sub-Committee of the Indian Railways Chemists and Metallurgists Committee on water treatment met thrice during the year and considered details regarding the number of engines that should be put on trial and the design of an automatic dosing gear to be adopted for various locos included in trials were considered. Sections for carrying out trials were also nominated and the financial implications of the treatment were worked out. It was reported at the second meeting held on 24 August 1953, that the engines nominated for trial had been fitted with blow-off cocks. At the subsequent meeting held on 27 February 1954, the defects noted during trials were discussed and suggestions were made regarding the final design of the dosing gear. Pending its finalization, the Sub-Committee recommended manual addition of a chemical complex into the tenders of the test locomotives as an interim measure. Experience gained so far showed that there is no necessity for the inclusion of sodium aluminate in the complex as proposed previously.

97. **Information and documentation**—

(a) *Technical Bulletin.*—The "Indian Railways Technical Bulletin", formerly issued as Quarterly Technical Bulletin, has been revised in form, contents and size. In each issue the coverage and selection of material are such as to contain matters of interest to railwaymen of all categories.

(*b*) Documentation Notes comprising a survey of the technical literature received in the Research Centre in the form of detailed abstracts have been issued monthly since January 1954. Though intended primarily for the use of Research Staff, copies of these notes are being distributed to railway administrations and appear to have stimulated particular interest.

During the year there were numerous enquiries on technical subjects from railway staff.

Liaison with other Research Institutions.—Intimate contact has been maintained with the research institutions in the country. Direct contacts were established for the exchange of information and publications with the Technical Laboratory of the Japanese National Railways, Tokyo, Japan, the American Association of Railroads, Chicago III, the Building Research Station, U.K.

98. Miscellaneous activities.—The Research Organization participated actively in the various specification-making bodies of the Indian Standards Institution on non-ferrous and ferrous metals, organic and inorganic chemicals, solid mineral fuels, coal terminology, paints, lubricants and refractories. It also took an active part in the work of a departmental corrosion committee.

Assistance was given to the Central Standards Office for Railways in the revision of I. R. S. Specifications.

A comprehensive survey was made covering disposal of scrap and procurement of non-ferrous components for Indian Railways and recommendation in this regard were made to the Railway Board.

The Research Organization represented the Railway Board at the proceedings of the Coal Advisory Committee of the Coal Commissioner and the Coal Washeries Committee of the Coal Board.

B. STANDARDIZATION

99. General.—The Central Standards Office for Railways, continued to perform design and standardization functions in the Civil and Mechanical Engineering and Architectural fields. It also performed the functions of Consulting Engineers and dealt with all references made by the Railways, and Indian and Foreign builders of railway equipment in respect of design, manufacture and inspection problems.

Two officers and one senior draughtsman of the Locomotive Wing were sent on deputation to the United Kingdom and the Continent for training, and they visited several design offices and workshops of locomotive builders with a view to studying design and manufacturing practices.

Sixteen special class apprentices received training for a period of six weeks each in the Calculation and Design Section of the Locomotive Wing at Chittaranjan. Two Engineering Graduate apprentices were also trained.

New books and catalogues were added to the Central Standards Office Library, raising the number of books and catalogues to 2,650 and 1,465 respectively. Technical Journals and Magazines from 61 Institutions and Firms from U.S.A., Australia, United Kingdom and India were received for circulation and reference purposes. Articles of interest continued to be indexed for reference and guidance.

The Assistant Chief Controller (Signals) and the Assistant Chief Controller (Specification), who were placed on deputation to New Zealand and Australia under the Colombo Plan in 1952-3, delivered short talks on signalling, operating and mechanical matters to the Railway officers at Headquarters of the Indian Railways and also at the Railway Staff College, Baroda.

100. Design and standardization.—The following Standards Committees continued to function in the Central Standards Office:

(1) Bridge and Structure Standards Committee ;

(2) Track Standards Committee ;

(3) Signalling and Interlocking Standards Committee ;

(4) Building Standards Committee ;

(5) Locomotive Standards Committee ;

(6) Carriage and Wagon Standards Committee ;

(7) Electrical Standards Committee ;

(8) Standing Committee on Standards and Specifications.

(ii) *Designs and technical consultations.*—Brief details of the more important items of design, standardization and technical consultation work

undertaken by the different wings of the Central Standards Office during the year are summarized below.

CIVIL ENGINEERING WING

Designs—

Bridges.—(*a*) Detailed designs of 20′, 30′, 40′, 60′ and 80′ M. G. M. L. standard spans in mild steel (rivetted) were prepared.

(*b*) The tender drawings of the girder spans for the proposed rail-**cum**-road bridge at Mokameh have been completed.

(*c*) Designs for tank staging for various capacities of tanks were completed and issued to Railways.

Track.—The following designs were prepared:

(*a*) Stop blocks for curved switches for 1 in 12 turnout ;

(*b*) Revised joint chair for 90 BH rails on the Southern Railway ;

(*c*) Revised design of ash pit ;

(*d*) 1 in 6 MG diamond crossing with 50R rails ;

(*e*) Wheel and axle for M.G. inspection trolley ;

(*f*) Combination fish plates for new IRS rail sections ;

(*g*) Reversed type brackets for MG and NG stretcher bars.

Signalling and interlocking.—Designs and drawings were completed of a number of signalling equipment. Drawings of the following equipment have been prepared and copies sent to Railways for comments:

(1) Spring points lever ;

(2) D. W. points mechanism (B.G.) ;

(3) D. W. points mechanism (M.G.) ;

(4) Switch roller bearing;

(5) Sighting board.

Building.—The designs of mile and gradient posts, platform lamp posts and station name boards prepared in C. S. O. were examined by the Building Standards Committee, who recommended certain modifications.

Technical consultations.—The Central Standards Office has been consulted by the Railways on matters relating to the assessment of the strength and strengthening of the existing bridges, designs of special structures such as shell-roofs for Central and Western Railways, and different types of block instruments.

Technical advice was rendered to the Director General, Supplies and Disposal, the Railways and the firms on queries raised by them from time to time in respect of grades of cast iron to be utilized for various signal fittings, patent right of certain items of signalling equipment and the indigenous manufacture of electrical signalling equipment.

The Railway Staff College, Baroda, was advised in respect of the design and specification of the Centralized Traffic Control Model proposed to be installed at the College.

The Bridge and Structures Standards Committee considered the question of the impact effect on small span masonry arch bridges under restricted speeds and decided that, pending experimental investigation, the impact factor on existing arch bridges be reduced in proportion to speed as in the case of plate girder spans in steel.

The question of overstress in masonry of existing piers and abutments was considered but the limits could not be definitely laid down owing to the actual strength of the masonry not being easily ascertainable and it was decided that each individual case should be dealt with on its merits by the Administration.

The design of M.G. Light trolley wheel and axle, with outside journal arrangement was approved and is being standardized. The trolley with gear-propelling arrangement as used on the *ex*-Assam Railway will be tried on all the railways.

The Signalling and Interlocking Standards Committee considered the different types of track insulation joints including the compregnated fish-plate joints and recommended that a non-conductive type of fish-plates (similar to the imported Permali type compregnated wooden fish-plate) are more suitable than the channel type of insulation particularly for straight tracks and that such a type be adopted as an alternative standard.

Compregnated wooden fish-plates manufactured by the Forest Research Institute at Dehra Dun have been tried. The trial results not having been as satisfactory as in the case of the imported Permali type, these are being examined to effect further improvement.

Designs prepared by Central Standards Office for (1) direct locking type and catch handle type interlocking frames, (2) double wire interlocking frame, (3) double wire direct lever, and (4) double wire lever clutch type, and drawings of signal posts two and three doll were examined by the Committee and further action is being taken on their recommendations.

The draft rules for the opening of Railways relating to the interlocking of trailing points on double line on the outlying siding were considered. An article prepared by the Central Standards Office on the most suitable type of signalling for main line sections was reviewed by the Committee.

The Building Standards Committee reviewed the building cost index figures furnished by Railways and considered that it was not possible to derive a truly representative figure for all types of buildings on different sections of each railway owing to varying conditions obtaining at different stations and due to difference in freight charges and lead on materials, etc. It was finally decided that the Railways should work out the building cost index figures taking the average of the weightages of Types I and II quarters for the important stations.

The question of the most economical but durable type of roof for staff quarters was considered and it was recommended that where rainfall is less than 60 inches, jack arch roofing with lime terracing is economical and durable. In regions of heavier rainfall or in black cotton areas, sloping roofs with asbestos sheets or tiles are to be preferred. Where extreme climates and low rainfall obtain, terracing with suitable soil on jack arch or stone slab roofs are considered satisfactory.

Miscellaneous.—The question of indigenous manufacture of signalling and interlocking equipment and other material used for signalling purposes, which are at present imported, was examined and would be further considered by a committee consisting of representatives of the Ministries of Railways, Works, Housing and Supply, and Commerce and Industry.

An officer of this office was, in addition to his duties, appointed as a Signal Engineering Member of the Standards Advisory Committee for preparing and submitting a report on the following subjects:

(1) To study the relationship on each railway between signal, block signal, telegraph and wireless work and to advise a workable standard set up for the six zonal Railways with adequate provision of specialized posts at suitable levels ;

(2) To study the proposals for setting up of a tele-communication development of technical training centre at Trichinopoly and to make suggestions in this connection after consulting the heads of tele-communication sections on Railways ;

(3) To examine the present methods of training skilled and supervisory staff in the Signal Department and to make recommendations regarding improvement both for initial training and for refresher courses.

The reports submitted by this officer on the above-mentioned subjects were examined by a committee of Chief Signal and Tele-communication Engineers. The recommendations of the Committee were submitted for the consideration of the Railway Board.

Representatives of the Engineering Department of Railways were invited to visit the Low Cost Housing Exhibition at Delhi, and the building construction at Chandigarh.

ARCHITECTURAL WING

Several important design and consultative items of work were undertaken during the year.

Station building at New Delhi.—A completely new scheme for the project was prepared, superseding the more extensive scheme, prepared in 1952.

The new building is located between the existing station building and the ceremonial platform. The design of the building is on modern lines suitable for local, climatic and other conditions, and seeks to provide all modern amenities for the passengers. In the entrance a large concourse hall has been provided with the necessary enquiry, reservation and booking offices, etc. A large waiting hall for the lower class passengers is also provided with necessary sitting and sleeping facilities. Ample lavatory and bathing facilities for men and women have been provided. Waiting rooms for upper and inter classes are also provided. Two open courts having a water pool and garden are included as a part of the building, to enhance the attractiveness of the grounds.

Besides refreshment rooms for lower and upper classes, retiring rooms for the lower class passengers will be provided on a nominal rent. These retiring rooms and the upper class retiring rooms are located on the second floor. Provision is also made for two additional storeys in the rear block, which will be a multi-storied block, to accommodate future additional offices or other passenger requirements. The usual station offices are located along the platform and some on the first floor. The railway mail service is located at one end of the building. The whole building is designed in reinforce-concrete frame work with brick panels. Suitable layout for drives and parking spaces for vehicles is provided in front of the building. The main platform and the island platform will be covered and will be connected by a foot over-bridge.

A large number of elaborate working drawings for this building were prepared and issued. Foundation stone of this building was laid by the Chief Minister of Delhi State on 11 February 1954.

Integral Coach Factory, Perambur—

Administrative Office.—Sketch designs for an office building for this project were prepared, providing office accommodation of about 30,000 sq. ft. and including meeting room, museum, library, laboratories, canteen, etc. Besides large halls for various departments, separate cubicles have been provided for officers. It is a three-storied steel-frame structure with provision for an additional floor. Concrete piles have been used for foundations. The building is designed on unit system so that additions and alterations in the internal arrangement can, if required in future, be easily made. The building which is on modern style is to be fully air-conditioned and provision for air-conditioning plant and, necessary ducts, etc., have been made. A complete set of working drawings and other large-scale details for this building on which the construction work has begun, were prepared and supplied.

Main works entrance.—A design for this block comprising the main entrance for the works with time office was also prepared. It also accommodates a dispensary, with its waiting and examination rooms, watch and ward offices and other offices for the Works Manager. Working drawings for the same were prepared and supplied.

Residences for Senior and Deputy Administrative Officers.—Sketch designs for these residences were prepared. Working drawings and other large-scale details were also prepared and supplied. The buildings are nearing completion.

Railway Testing and Research Centre at Lucknow.—Large-scale details and other finishing details were prepared in connection with the above building. Construction on this building was completed during this year. Honey-comb type sun breakers, which are simple in design, have been provided on this building. This is for the first time sun breakers have been used on a Railway building. The building was inaugurated by the Chief Minister, Uttar Pradesh on 12 February 1954.

Among other items of work handled by the Architectural Wing were the sketch designs of the station building at Jaipur and detailed drawings for the Lucknow metre gauge station building, new block offices for the Northern Railway Headquarters, Divisional Offices at Jullundur, the Hospital building at Madura, Northern Railway Stadium, New Delhi and the Indian Railway Stall at the Telegraph Centenary Exhibition. Working drawings were also prepared for the station building at Gandhidham.

LOCOMOTIVE WING

Designs.—The more important design and drawing work undertaken during the year includes the following items:

(*a*) Design of cast iron cylinders for YG class locomotives to suit indigenous manufacture ;

(*b*) Strengthening of existing tender underframes of A/CWD locomotives ;

(*c*) Revised design of tender underframes for WP and WG class locomotives, and stress analysis thereon ;

(*d*) Design of one-piece ashpan for WP/WG class locomotives ;

(*e*) Checking of drawings and stress calculation of designs submitted by the Japanese builders of WG, YG, ZP and ZE class locos ;

(*f*) Layout of six classes of locomotives and tenders by Vogel's method for checking frame/rail clearances ;

(*g*) Stress analysis of various components reported to have failed in service and redesign, where necessary ;

(*h*) Investigation on the provision of flangeless tyres on 4-6-2 and 2-8-2 type locomotives of all gauges, with particular reference to effect on track ;

(*i*) A study of comparative economics of working heavy goods trains with—

(1) Garratt locomotive, and

(2) Two WG class locomotives,

on a graded section of the Eastern Railway.

Apart from improvements to the components of existing IRS locomotives, the following matters were considered during the year under review:

(*a*) Review of the performance of double taper form of piston rod crosshead connection ;

(*b*) Constant resistance centering device form of control for bogies and trucks ;

(*c*) Revision of design of WM class locomotives ;

(*d*) Hot Box Committee's report.

Technical Consultations.—Decisions on technical matters were communicated on a large number of references by locomotive builders in respect

of the 1954-5 Rolling-Stock Programme. This work was particularly heavy in respect of the orders placed in Japan, which necessitated discussions with the Japanese Engineers, and investigation of the tentative drawings submitted by them. Similarly, the substantial increase in the outturn of locomotives and boilers at Chittaranjan and Telco Works resulted in a corresponding increase in references to the Locomotive Wing.

Miscellaneous.—The production of part drawings for locomotive components continued for both IRS and non-standard American-built locomotives. During the year, 1,300 drawings were made, bringing the total to 4,430. One thousand one hundred forty one tracings were mechanically reproduced and circulated to railways.

CARRIAGE AND WAGON WING

Designs.—The more important design and drawing work undertaken during the year under review includes the following:

Carriages—

(1) Essential construction drawings for metre gauge coach shells to be built by Hindusthan Aircraft Limited ;

(2) Arrangement of seats and luggage racks for III class broad gauge and metre gauge coaches on I. R. S. underframes ;

(3) Modifications to I. R. S. draw and buffing gear to suit all steel light-weight coaches broad gauge ;

(4) New layouts for the following types of coaches:

(*a*) Air-conditioned coaches, corridor type as well as compartment type (broad gauge) ;

(*b*) Second class coach, compartment type (broad gauge) ;

(*c*) Military car in Hindusthan Aircraft Limited shall 407 model (broad gauge) ;

(*d*) Air-conditioned and second class composite on I. R. S. underframes (metre gauge) ;

(*e*) Metre gauge third class coach 9′ 0″ wide ;

(*f*) Metre gauge second class coach 9′ 0″ wide ;

Wagons.—(1) Drawings for metre gauge Dynamometer Car underframes,

(*a*) 62′ 6″ long with 44′ 6″ bogie centres and

(*b*) 56′ 6″ long with 39′ 0″ bogie centres ;

(2) Drawings show modifications to the mild steel underframe for timber bodied air-conditioned coaches (broad gauge) ;

(3) New cradles for broad gauge petrol tank wagons (TPR) ;

(4) Calculations of the deflection of broad and metre gauge carriage underframes by 'Strain-energy' method ;

(5) Replacement of non-rationalized rolled sections by rationalized ones for standard stock.

Technical Consultations.—The following are the more important subjects which were considered by the Carriage and Wagon Standards and the Electrical Standards Committees during the year:

(1) Standard layouts of broad gauge coaching stock on I. R. S. underframes ;

(2) Flat seats and back rests for broad and metre gauge lower class passenger stock;

(3) Strengthening of underframes of air-conditioned coaches;

(4) Elimination of pockets formed on the top corner pressings, and the stiffening of body ends, of open wagons ;

(5) Trials with an anti-waste grab device for carriage and wagon axle-boxes ;

(6) Results of tests with indigenously produced corrosion resisting steel sheets to determine suitability for wagons ;

(7) Results of trials with indigenous brass-sleeved and/or brass cast-on vacuum brake piston rods ;

(8) Protective measures on semi-steel bodied coaching stock running in electrified sections ;

(9) The proposal for a modified suspension for dynamos on metre gauge stock and revision of certain clauses of the I. R. S. Specification relating to dynamos;

(10) Examination of the report of the Northern and North Eastern Railways on the external light fittings previously exhibited, and its adoption as standard;

(11) The indigenous manufacture of alkaline cells for train lighting;

(12) Recommendations to be made for the extension of the list of permissible alternatives for train lighting equipment ;

(13) End-on generation of electricity on trains.

Miscellaneous.—The Carriage and Wagon Wing undertook the following more important items of miscellaneous work :

(1) Estimation of the quantity of steel required for manufacture of various types of I. R. S. wagons, underframes and body shells ;

(2) Steel requirements for the manufacture of various types of wagons with a view to assessing the manufacturing cost and facilitating the issue of licenses for steel quotas ;

(3) Enhancement of prices for different types of rolling-stock on order in India due to rise in material cost and labour wages ;

(4) Preparation of drawings required for the Carriage and Wagon and Stores and Specifications Standards Committee meetings and maintenance of standard drawings of rolling stock ;

(5) Charts showing electrodes and grinding wheels ;

(6) Layouts and formation of one broad gauge and one metre gauge Indian Railway Centenary Exhibition Trains. The exhibits were selected and their location indicated in various gauges ;

(7) Experimental work and mock-ups of various types of seating and allied arrangements for both broad gauge and metre gauge coaching stock at the Experimental Workshop, Shakurbasti.

101. Specifications and codes of practice.—The normal work of keeping the Indian Railway Standard Specification up-to-date continued during the year. Sixty two Indian Railway Standard Specifications were revised and re-issued. Twenty five new Indian Standard Specifications and one British Standard Specification were adopted for use on Indian Railways. The total number of Indian Standards Specifications adopted for use on Indian Railways rose to 127.

Six Indian Railway Standard Codes of Practice and Bridge Rules were revised and re-printed. Correction slips were also issued to some of the Indian Railway Codes. Chapter V of the Indian Railway Standard Track Manual was printed and issued. Particular specifications were prepared for the following locomotives :

WG class, 2-8-2 type BG goods locomotives ;

WP class, 4-6-2 type BG passenger locomotives ;

WM class, 2-6-4 type BG tank locomotives ;

WHG class, {4-8-2 / 2-8-4} type BG heavy goods locomotives ;

WP/WG class spare boilers ;

YB class spare boilers ;

YG class, 2-8-2 type MG goods locomotives;

YP class, 4-6-2 type MG passenger locomotives ;

YM class, 2-6-4 type MG tank locomotives ;

ZE class, 2-8-2 type NG goods locomotives ;

A/CWD class spare fire boxes ;

AWE class spare fire boxes ;

Hand operated Rail Travelling Cranes.

Particular specifications were prepared for the following types of rolling-stock required for procurement purposes from indigenous as well as foreign sources against the 1954-5 programme:

(a) *Coaches*—

(i) 50 unfurnished coach body-shells (broad gauge), third batch, from Schlieren;

(ii) Diesel Railcars (broad gauge) ;

(iii) All-metal electric multiple unit coaches suitable for 1,500 volts D.C. in Bombay area comprising 4-coach units ;

(iv) All-metal electric multiple unit coaches suitable for 3,000 volts D.C. for Calcutta electrification comprising 3-coach units ;

(v) All-metal electric multiple unit coaches suitable for 3,000 volts D.C. for Calcutta electrification comprising 4-coach units.

(vi) 50 all-metal lightweight coach shells in knocked-down condition from Schlieren, fourth batch for assembling at Integral Coach Factory.

(b) *Wagons (broad gauge)*—

(i) Open wagons 'O';

(ii) Open heavy wagons 'OX' ;

(iii) Covered wagons 'CR' ;

(iv) Cattle and military wagons 'CMR' ;

(v) Covered explosive wagons 'CE' ;

(vi) Petrol tank wagons 'TPR' ;

(vii) Goods brake-van 'BVG' ;

(viii) 4-wheeled coaching underframes 27′ 6″ ;

(ix) Bogie rail wagon 'BR' ;

(x) Bogie well wagon 'BWL' ;

(xi) Ammonia tank wagon 'TAL' ;

(xii) Chlorine tank wagon 'TCL' ;

(xiii) Tower wagons for Western and Eastern Railways.

Metre gauge—

(i) Open military wagon 'MOM';

(ii) Petrol tank wagon 'MBTPX';

(iii) Covered wagon 'MC';

(iv) Open wagon 'MOX';

(v) Bogie rail wagon 'MBR';

(vi) Bogie coaching underframe 56′ 6″.

Narrow gauge—

(i) Bogie hopper wagon 'NOBC';

(ii) Bogie open wagon 'NOL';

(iii) Bogie rail wagon 'NR';

(iv) Bogie covered wagon 'NCL';

(v) Bogie coaching underframes 34′ 6″.

The Standing Committee on Standards and Specifications discussed the following items:

(i) Proposed revisions to the existing Indian Railway Standard Specifications;

(ii) The adoption of Indian Standard Specifications for Indian Railway purposes;

(iii) The adoption of various items of common use, such as, 'V' type ticket nipper and carriage washing brush, as the future standards for use on Indian Railways.

A revised statement relating to the movement of overdimensional consignments (O.D.C.) was issued. This statement combines the old O.D.C. I and II statements and gives all information regarding maximum moving dimensions of the various sections of Railways. A supplement to the O. D. C. statement giving information relating to the military vehicles was also issued.

The Draft Signal Engineering Manual, prepared by the Civil Engineering Wing was examined by a Committee of Chief Signal and Tele-communication Engineers, and would be finalized in the light of their recommendations. The drafts of standard catalogues for F2 and He classes of stores were prepared and circulated to railways for comments.

102. Inspection.—Inspection of prestressed concrete girder spans near Siliguri on the North Eastern Railway was carried out during the year under review.

During the year under review, inspection work at Chittaranjan Locomotive Works ceased owing to the transfer of the responsibility to the General Manager of the Works. However, the inspection work at Telco increased considerably as a result of the increase in the rate of outturn of boilers and locomotives and in the manufacture of components during 1954 as compared with the previous year. The following locomotives and boilers produced by Messrs. Tata Locomotives and Engineering Company were inspected and accepted during the year:

BOILERS

XC	17 Numbers.
XB	14 Numbers.

LOCOMOTIVES

YG	18 Numbers.
YP	6 Numbers.

103. Liaison with technical bodies.—The Central Standards Office continued to represent the Ministry of Railways on the General Council, Engineering Division Council, Building Division Council, and 49 Sectional Committees and Sub-Committees of the Indian Standards Institution. Active part was taken in initiating and developing all-India standards which were of particular interest to Railways.

This office also represented the Ministry of Railways on:

(*a*) Mechanical Engineering Committee of the Board of Engineering Research of the Council of Scientific and Industrial Research ;

(*b*) Bridge Sub-Committee of the Indian Roads Congress ;

Membership of the following Institutions was continued and their publications were regularly received, circulated and used for reference purposes:

(i) Association of American Railroads (USA) ;

(ii) American Railway Engineering Association (USA) ;

(iii) American Society for Testing Materials (USA) ;

(iv) International Association for Bridge and Structural Engineering (Switzerland) ;

(v) Master Boiler Makers' Association (USA) ;

(vi) Institute of Welding (UK) ;

(vii) Indian Roads Congress, New Delhi ;

(viii) Timber Dryers' and Preservers' Association of India.

CHAPTER VII

FUEL ECONOMICS AND RAILWAY COLLIERIES

104. Railway Fuel Economy Enquiry Committee.—It was stated in the last report that action had been initiated for implementation of the recommendations concerning the Ministry of Railways alone and that the other recommendations were under examination in consultation with the Ministry of Production and the Planning Commission.

The progress made towards implementation of the more important recommendations is briefly stated below.

Production of coal.—Action has been initiated by the Production Ministry for the development of coal resources in the outlying fields. The Government of Hyderabad have already embarked on a scheme for the development of the Singareni Collieries, designed to increase the present output of 1·3 million tons to 2·4 million tons in 1958. The development of the Korba field in Madhya Pradesh has been taken up and the proposals made by the Committee appointed to prepare a layout of coalfield for assignment to the parties interested, have been approved and communicated to the State Government. With regard to Assam coalfields, the State Government have applied for grant of mining leases. As regards Orissa, the Central Government have applied for prospecting and mining leases in certain areas adjacent to Talcher and Deulbera Collieries, and the approval of the State Government is awaited. The matter is under active consideration so far as Kurasia Government Colliery and Karanpura Coalfields are concerned.

Grading and pricing of coal.—The Indian Standard Institute have set up a sub-committee known as "terminology classification of coal sub-committee" at the instance of Planning Commission, to evolve a scientific system of grading of coal. The question of appointing another committee by the Coal Board, as recommended, to examine in detail the new proposals for coal grading and pricing has, therefore, been kept in abeyance by the Ministry of Production till the submission of the report by that Sub-Committee.

Preparation of coal.—In order to obtain evidence regarding the most suitable and economical types for washing various coals for particular requirements, the Production Ministry have been considering the question of allocation of funds for installing different types of pilot washing plant at the Fuel Research Institute. It is also learnt that the Committee appointed by the Coal Board to examine the problems relating to the establishment of coal washeries in India, has submitted its report. The Ministry of Production have also appointed a Committee to report on the establishment of a washery at Kargali/Bokaro State Colliery primarily to supply the requisite quantity of washed coal to the new steel plant at Rourkela.

Lignite or brown coal.—The development of lignite deposits in South Arcot District, Madras, which is at present the concern of the Madras Government, is already in progress and a pilot quarrying scheme is in hand. The Ministry of Production, who are also keenly interested, have appointed a firm of consultants Messrs. Power Dufferyn Technical Services, Ltd., to submit a project report on the economics and other aspects of the scheme.

Railway requirements of coal, supply and distribution.—As recommended by the Committee a consolidated statement on coal by grades required on the Railways for different categories of locomotives has been prepared by the Railway Testing and Research Centre. A Sub-Committee has been formed to prepare a loco coal programme on these lines for the supply of various grades of coal to different Railways as far as practicable. The recommendations of the Committee regarding districts or zones of Railways being supplied coal from fixed sources nearest to the consuming

points, grouping of collieries with distributing centres to serve as primary receiving points in respect of supplies to railway zones, etc., will be given due consideration in framing the loco coal programme. The programme, when finalized, will be sent to the Ministry of Production for implementation.

The Ministries of Production and Railways are jointly considering the question of the best kind of organizational set up to secure efficient quality control of coal. The recommendations of the Committee that Railways should select their own coals by inviting offers from collieries and arranging supplies on contract basis, are not feasible under the Colliery Control Order now in force. The matter is, however, under consideration.

Transport problems and supply of coal to the south.—The principal operating problem is the urgent need to augment coal loading and their movement from North to South. The plans made by the Railways to tackle such problems are briefly enumerated below:—

Central Railway.—(i) For raising coal loadings in the Central India Coalfields, provision has been made for (*a*) a chord line between new Katni Junction on the Eastern Railway and Katni South on the Central Railway, (*b*) additional facilities in Itarsi and Bina yards, (*c*) a crossing station each on Bina-Katni and Katni-Jubbulpore sections and two crossing stations and watering facilities on the Bhopal-Ujjain Section, and (*d*) remodelling of Jukehi yard. Some of these works are already in progress.

(ii) To meet increased coal traffic from Singareni coalfields, provision has been made in the works programme for (*a*) remodelling Kazipet and Dornakal yards and three additional crossing stations between Kazipet and Bezwada, and (*b*) a colliery siding at Bhadrachalam Road. The problem of break of gauge transhipment capacity at Secunderabad is also engaging attention.

Southern Railway.—To cater for increased movement from North to South *via* Waltair and from Bezwada to Madras, works are in progress on (*a*) the lengthening of the loops at 50 stations— works at 23 stations have already been completed—and remodelling of Bezwada and Rajamundry yards, (*b*) separation of metre and broad gauge tracks beyond Kistna Canal, (*c*) conversion of metre gauge Reningunta-Gudur Section into Broad Gauge and (*d*) for provision of additional 12 crossing stations. Additional transhipment facilities are also being provided at Arkonam, Katpadi and Bangalore.

For increasing the intake *via* Raichur, provision has been made for six additional crossing stations, extension of loops at 11 stations and additional crossing loops at five stations and improvements in Raichur, Gooty and Nandalur yards. To increase capacity beyond Jalarpet, three additional crossing stations have been opened. Further improvements in Salem, Erode and Podanur yards have been programmed, and the strengthening of Shoranur-Calicut section to take heavier types of engines is in progress. For increased movement by the all metre gauge route, the strengthening of track on the Pakala-Dharamavaram section has been sanctioned and relaying of track on the Gadag-Sholapur is nearing completion.

Eastern Railway.—Provision has been made in the works programmes for (*a*) doubling Sini-Gomharria and Anara Burnpur sections and a portion of Tatanagar-Asanboni section, and (*b*) a crossing station and additional facilities on the Anara-Chandil section. A new rail connection from Guabarabil area to Manoharpur-Rourkela section on the main line is under consideration.

To facilitate movement from Central India Coalfields, works now in progress are expected to be completed by March 1956. These include stepping up the capacity on the Anuppur-Katni and Manendragarh-Anuppur sections by providing new crossing stations and remodelling of yards, at Kitma, Bijuri and Chirmiri; additional sorting facilities at Manendragarh Sahodol and Bilaspur yards; and conversion of New Katni block hut into a 2-line crossing station and a branch line and assisted siding to serve Rajnagar and West Jhagrakhand collieries.

Besides, the capacity of Kharagpur-Vizianagram section is being increased by the remodelling of the Bhadrak, Khurda Road and Palasa yards in order to step up movements *via* Waltair. The works are already in progress and are expected to be completed by March 1956.

To cope with increased movement from Bengal/Bihar and Karanpura coalfields, provision has been made for (*a*) additional facilities at Sitarampur, Radhanagar, Hendegir, McCluskieganj and Latehar, (*b*) crossing stations on the Barkakana-Bhurkunda and Ondal-Ukhra sections, (*c*) additional line from Mile 5-B to Calcutta Docks, and (*d*) additional facilities on the Lillooah-Tikikapara chord line.

Steps to increase the capacity of the Moghalsarai yard from 1,500 to 2,000 wagons per day is under examination. The construction of the Broad Gauge line from Champa *via* Korba now in progress, which is intended to serve the new coalfields in these areas, is expected to be completed by November 1955.

North-Eastern Railway.—The capacity of the Katihar-Siliguri sub-section is being increased by (*a*) lengthening of loops at 12 stations and opening of five additional crossing stations, and (*b*) the provision of additional facilities in Siliguri marshalling yard. The capacity of the Siliguri-Alipur Duar sub-section is also being increased by (*a*) easing gradients on certain portions and strengthening of certain bridges, and (*b*) providing additional crossing stations and loops at five stations. Most of the above works have been included in the works programmes and the increased capacity is expected to be available by 1956.

Western Railway.—The line capacity of Agra East Bank-Bayana, Kotah-Ratlam and Godhra-Ratlam sections is being increased by providing additional crossing stations and additional loops which will enable more traffic to be handled from Central India and Bengal and Bihar coalfields.

The doubling of Ahmedabad-Kalol section M.G. has been included in 1954-5 programme for increasing the line capacity of Ahmedabad-Mehsana Section.

Northern Railway.—Doubling of Kanpur-Ekdil line on Allahabad Division and of Mahilabad-Bareilly section on the Moradabad Division, are the major projects nearing completion. The provision of additional running loops at a number of stations on the Lucknow Division has been programmed for 1954-5. On the metre gauge, the remodelling of the Bikaner yard is in progress.

With the formation of a Sub-committee of the Transport Planning Study Group for considering the over-all transport requirements following increase in production under the Five Year Plan, it was not considered necessary to set up a "Standing Coal Transport Planning Committee" proposed by the Indian Fuel Enquiry Committee.

As regards the question of improving wagon turnround and carrying capacity, arrangements have been made to run 2 to 3 block specials of coal *ex* collieries for "above Moghalsarai" daily, and the Coal Commissioner has been asked to arrange for a few more block specials of coal in consultation with the Eastern Railway. Further, the present system of levying freight charges on coal on the marked carrying capacity of the wagons enhanced by two tons automatically ensures loading of coal wagons to the maximum permissible degree.

As to the provision of a cushion of 200 wagons daily for Bengal and Bihar coalfields and 50 wagons daily for the other coalfields to meet the urgent demands, it may not be found possible to spare wagons for this purpose on account of the present tight wagon position.

With regard to the appointment of a railway officer of senior administrative rank to function as a Liaison Transport Officer for making day-to-day allotment of wagons in collaboration with the Coal Commissioner, it may be stated that a Railway Transport Officer, of Junior Administrative rank, has already been lent to the Ministry of Production who is working as Joint Deputy Coal Commissioner (Distribution).

Economy in consumption and prevention of losses.—The recommendations of the committee for providing expanded metal covers for open coal wagons to protect coal in transit has been considered to be impracticable. The Railways have, however, been asked to take necessary action for providing fenced enclosures for stacking areas in sheds.

The suggestions for giving effect to various economy measures have been examined and necessary action is being taken so far as control over consumption is concerned. The matters relating to Power and Fuel Research problems have been referred to the Railway Testing and Research Centre for progressing.

Fuel accounts.—The more important recommendations of the chartered accountants, appointed at the instance of the Committee to examine the fuel accounts of the Western Railway, with a view to finding out the defects in the existing fuel accounting system and to suggest ways and means for removing these defects, were:—

(i) standardization of the coal bill forms;

(ii) centralization of the fuel accounts in the headquarters of the Accounts Department; and

(iii) introduction of a scheme of identification of each loco coal wagon from the base station to the destination.

Standard bill forms for coal supplies have been drafted and are being finalized. Instructions have been issued to Railways for centralizing the Fuel Accounts at the Headquarters of the Financial Adviser and Chief Accounts Officer, and detailed rules of accounting laid down for adoption on uniform basis on all railways. The suggested scheme of identification cards to accompany each coal wagon was not considered by railways as practicable, and accordingly a modified scheme of tracing the wagons through wagon disposal statements prepared by the forwarding stations has been introduced.

Fuel statistics.—The recommendations on the rationalization of the fuel statistics so that the various facts for direct and indirect factors affecting coal consumption are adequately brought out by the statistical figures, have been examined and instructions issued to follow such of the recommendations as are practicable.

The recommendation regarding introduction of statistics of service groups to admit of proper control of fuel consumption on each service unit having uniformity in the operating conditions is under further examination in order to ascertain whether the labour involved will be commensurate with the results to be obtained from the proposed refinement as there are practical difficulties in maintaining detailed data with the available staff.

Different types of traction and power and fuel research.—

(a) *Electrification.*—The position with regard to the electrification schemes as suggested is that preliminary survey of Howrah to Moghalsarai section and Calcutta suburban services of the Eastern Railway has been completed and detailed estimates, phase to phase, are under preparation. The scheme for the electrification of the entire section between Madras and Villupuram and its extension up to Chinglepet is under examination by the Southern Railway. There is, however, no proposal at present for electrification of the Madras-Bangalore and Madras-Bezwada sections of this Railway. As regards Quilon-Ernakulam line, it has been decided after examination of the estimate not to electrify this section for the present. The electrification of Igatpuri-Bhusawal section of the Central Railway is proposed to be considered in the second Five Year Plan and that of the sections between Virar-Ahmedabad on the Western Railway and Kanpur to Lucknow and Delhi to Amritsar on the Northern Railway in the third Five Year Plan.

(b) *Dieselization.*—The recommendation regarding introduction of diesel traction on the Saurashtra section of the Western Railway is under consideration. As regards introduction of diesel light rail-car services on suitable sections and of diesel power for shunting services, order for 24 metre gauge rail-cars have already been placed abroad and provision for the procurement of another 24 broad gauge rail-cars has also been made in the

1954-5 programme. 30 Diesel shunting locomotives (broad gauge) are on order abroad for trial on Indian Railways.

(c) *Power and fuel research.*—Investigations are in hand by the Railway Testing and Research Centre with a view to establish reliability in operations and maintenance of design improvements for incorporation in future locomotives, and the research and investigation work involved in these will take about another five years.

The recommendations for development of

(1) other types of locomotives to meet growing traffic requirements most efficiently,

(2) designs of Gas Producers using coal or coke for rating up to 400/500 H.P. in order to give impetus to dieselization; and

(3) designs of combustor and heat exchanger suitable for Indian coals to facilitate the adoption of external combustion gas-turbine locomotives

are under active consideration.

An examination of the recommendations for setting up a Standing Railway Power and Electrification Planning Committee consisting of representatives of the Ministry of Railways, the Planning Commission and the Central Water and Power Commission has revealed that no better results than those obtained already under the existing arrangements, which are working quite satisfactorily, would be achieved by the appointment of such a committee.

Fuel control organizations and training centres.—The recommendations regarding setting up of regional and central fuel control organizations and training centres are under consideration.

105. **Total coal consumed by railways.**—The total quantity of coal consumed on all Indian Railways during the year under review is shown below, compared to the previous year:

	Tons 1952-3	Tons 1953-4
Government Railways	11,036,479	11,276,612
Non-Government Railways	82,463	81,393
TOTAL	11,118,942	11,358,005

The gradewise distribution is as follows:

	Tons 1952-3	Tons 1953-4
Selected A	1,108,476	1,360,322
Selected B	2,571,400	2,651,404
Grade I	*5,432,214	5,435,001
Grade II	*1,420,895	1,257,889
Grade III-A and B	*40,755	23,953
Small coals	545,202	629,436
TOTAL	11,118,942	11,358,005

NOTE.—Figures for the Gondal region of the Western Railway and the Assam portion of the North Eastern Railway have been distributed on an estimated basis.
* Revised figures.

106. **Coal mined in India.**—In 1953-4 the coal mined in the various states in India amounted to 35,979,167 tons as against 35,998,950 tons in 1952-3, *i.e.*, there was a decrease of 19,783 tons in the year under review.

107. **Coal despatched by rail.**—The quantity of coal carried by the Eastern Railway during 1953-4 was 27·41 million tons, or 1·26 million tons less than that carried during the previous year.

108. **Output from principal railway collieries.**—The total output from the principal railway collieries during the year 1953-4 as compared with 1952-3 is shown in the sub-joined table. There has been a decrease of 56,817 tons or 1·78 per cent as compared with the output of previous year.

OUTPUT OF COAL FROM RAILWAY COLLIERIES DURING 1953-4

(Figures in tons)

Colliery	Railway	1952-3	1953-4						
			Total	Selected		Grade			
				A	B	I	II	IIIA	IIIB
(1) Bhurkunda	Eastern	168,212	143,582	..	143,582	..	..	..	..
(2) Kargali	Central	608,672	685,902	..	..	685,902	..	..	..
(3) Kurharbaree and Serampore	Eastern	288,879	274,069	233,280	1,348	..	..	..	39,441
(4) Joint Bokaro	Eastern	1,499,481	1,384,132	..	..	1,381,255	2,877	..	..
(5) Joint Sawang	Eastern	63,613	75,944	..	..	75,944	..	..	..
(6) Jarangdih	Western and Southern	27,788	36,601	..	..	..	36,601	..	..
(7) Talcher	Southern	126,430	134,925	..	..	..	134,925	..	..
(8) Kurasia	Western	232,887	230,509	..	..	230,509	..	..	..
(9) Argada	Eastern	90,070	76,894	..	72,372	4,522	..	..	..
(10) Deulbera	Eastern	90,207	96,864	..	..	..	96,864	..	..
	TOTAL	3,196,239	3,139,422	233,280	217,302	2,378,132	271,267	..	39,441

The total quantity of coal despatched by railway collieries during 1953-4 amounted to 2,797,030 tons, of which 2,767,424 tons, or 98·9 per cent were despatched to Indian Railways. This represents 24·4 per cent of the total coal consumption of railways during the year.

109. Coking coal.—The particulars of the coking coal produced by railway collieries during the year are summarized in the following statement:

QUANTITY OF COKING COAL PRODUCED BY RAILWAY COLLIERIES DURING 1953-4

Colliery	Grade	Tons produced	Quality of coal and where used
(1) Kargali	Grade I	685,902	Inferior coal of high ash contents and poor coking proportion; used entirely for goods services.
(2) Giridih (Kurharbaree and Serampore).	Selected 'A'	233,280	Best high grade coking coal, the dust of which is manufactured into hard metallurgical coke for use in railway foundries and workshops; used for mail, express and goods services.
	Selected 'B'	1,348	
	Grade IIIB	39,441	Very inferior coking coal unsuitable for metallurgical purposes owing to high ash contents; used for slow goods and shunting services.
(3) Joint Bokaro	Grade I	1,381,255	Inferior grade coal, the dust of which only is suitable for metallurgical purposes; the seam worked as a whole, owing to high ash content is unfit to be used even for blending with high grade coking coals, unless intensive cleaning and washing is resorted to; used entirely for goods services.
	Grade II	2,877	Very inferior coking coal; unsuitable for metallurgical purposes owing to high ash contents; used entirely for goods services.
(4) Joint Sawang	Grade I	75,944	Inferior coking coal similar in quality to Joint Bokaro coal, but more inferior in quality as coking coal ; used entirely for goods services.
(5) Jarangdih	Grade II	36,601	Very inferior coal, unsuitable for metallurgical purposes ; used for slow goods and passenger services.

110. Capital invested in and financial results of the working of railway collieries during 1953-4.—Capital invested in, and financial results of, railway collieries during 1953-4 are given below:

Colliery	Total Capital outlay up to 31 March 1954	Earnings during 1953-4	Working expenses during 1953-4	*Profit or loss in working during 1953-4
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1. Bhurkunda	61,38,509	21,37,131	24,50,022	—3,14,781
2. Kargali	1,55,42,088	92,09,308	88,53,527	+5,70,868
3. Kurharbaree	69,91,270	24,45,881	49,50,637	—24,97,765
4. Serampore	68,36,202	16,85,019	40,71,375	—24,30,089
5. Bokaro	1,14,21,536	1,97,50,972	89,74,298	+1,07,57,058
6. Sawang	24,86,179	10,33,954	13,76,506	—3,17,723
7. Jarangdih	40,34,357	4,96,004	50,82,911	—45,95,610
8. Kurasia	42,38,285	34,51,637	40,57,345	—5,97,617
9. Talcher	71,47,163	20,45,136	24,81,782	—4,19,733
10. Argada	4,13,381	11,37,604	9,78,044	+1,65,926
11. Deulbera	26,02,211	14,76,465	16,64,514	—1,85,371
TOTAL	6,78,51,181	4,48,69,111	4,49,40,961	+1,35,163

* In arriving at these results 'opening' and 'closing' stock of coal has also been taken into consideration in the last column and as such it will not be possible to arrive at these figures on the basis of figures of earnings and expenses shown in the table.

The *plus* and *minus* signs against the figures in the last column represent profit and loss respectively. The capital invested represents the fixed and floating assets, less sinking fund.

Working of Railway Collieries for the year 1953-4 disclosed a net profit of Rs. 1,35,163 against Rs. 61,20,802 in the previous year. This decrease has been mainly due to the following reasons:

(i) A landslide in the Bhurkunda Colliery resulting in the drop of output.

(ii) Write back from Capital to Revenue during the year of a sum of Rs. 41,15,478-9-0 representing the Capital cost of ineffective shaft and 'quarry' incline of the Jarangdih Colliery.

(iii) Debit adjustment to Revenue during the year of a sum of Rs. 7,24,000, representing the amount of outstanding bills erroneously taken against Capital account of the Kurasia Colliery instead of to the revenue (proper head) in the first instance.

111. Railway collieries and labour.—The relations between the labour and the Administration were cordial during the year.

The general health of the labour and sanitation were satisfactory.

The following amenities were provided for the labour employed in the Railway Collieries during the year:

(1) 145 blocks of miners quarters, and community latrines for 290 miners houses were completed in Sawang Colliery, 2 jewel filters were installed and water is being supplied through jewel filteration plant.

(2) Construction of 17 units of miners quarters in the Talcher colliery was completed and the construction of a further 17 units is in progress.

(3) One non-combined Post Office was opened in the Kurasia colliery.

(4) The building of miners creche in Kargali colliery was completed.

The surplus labour at deep pit of the Serampore colliery were accommodated in the newly started upper Kurhurbaree workings at central pit and at Hetla and Khadia inclines where extension of the endless haulage underground has opened up new working faces.

CHAPTER VIII

RAILWAY EQUIPMENT AND STORES

112. Railway Stores Enquiry Committee, 1950-1.—One of the main recommendations of the Railway Stores Enquiry Committee, namely, the rationalization of procurement procedure by transferring the responsibilities for the procurement of items peculiar to railways and other essential commonuser items, from the Ministry of Works, Housing and Supply, to the Ministry of Railways, has not yet been implemented pending the final report of the Stores Purchase Committee referred to in paragraph 106 of the Report for last year.

As a result of the drive, instituted by the Railway Board in 1951, the stores balances on Indian Railways which stood at Rs. 57·17 crores on 31 March 1953, was reduced to Rs. 52·36 crores on 31 March 1954, thus showing a further reduction of Rs. 4·81 crores.

113. Value of railway equipment and stores ordered.—A statement showing the value of railway equipment and stores ordered through various sources, *viz.*, (1) Ministry of Works, Housing and Supply, (2) other Ministries, (3) Railway Board, and (4) direct by Railways, during the year 1953-4, as compared with the value of similar orders placed during 1952-3, is given below. The Railway Board continued to purchase during the year under review, as in previous years, certain important rolling stock items for Indian Railways, like locomotives, coaches and wagons, which were procured comparatively in large numbers during the year 1953-4.

TOTAL VALUE OF STORES ORDERED

(Figures in lakhs of Rs.)

Year (1)	Total value of railway equipment and stores ordered (2)	Value of railway equipment and stores ordered through the Ministry of Works, Housing and Supply (3)	Value of railway equipment and stores ordered through other Ministries (4)	Value of railway equipment and stores ordered by the Railway Board (5)	Value of railway equipment and stores ordered direct by the Railways (6)
1952-3					
(a) Value	93,81·50	30,78·14	1,39·61	14,86·06	46,77·69
(b) Percentage	100	32·82	1·48	15·84	49·86
1953-4					
(a) Value	1,05,86·07	28,92·88	1,22·43	27,52·16	48,18·60
(b) Percentage	100	27·33	1·16	25·99	45·52

114. Payments made for railway equipment and stores.—The payments made in respect of equipment and stores by the Government Railways during the year 1953-4 amounted to Rs. 90,03 crores, as against Rs. 92,15 crores last year. The value of indigenous materials increased by Rs. 28 lakhs and that of imported materials decreased by Rs. 2,40 lakhs.

The statement below represents a detailed summary of the payments made during 1953-4 and the corresponding figures for 1952-3. The stores classified under A, D and G recorded increased payments during the year.

PAYMENTS MADE FOR RAILWAY MATERIALS DURING 1953-4

(Figures in lakhs)

Particulars	Imported materials			Indigenous materials	Total	
	Purchased direct	Purchased through agents in India	Total imported materials		1953-4	1952-3
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(A) Bridge work and its parts, fittings and special fastenings	1	..	1	16	**17**	13
(B) Engineering plant and components including all hand and power machinery	5	11	16	13	**29**	56
(C) Workshop machinery, plant and equipment including pneumatic machinery and tools	6	73	79	33	**1,12**	1,29
(D) Permanent way material and track tools	4	1	5	8,41	**8,46**	5,76
(E) Rolling-stock	11,47	8,66	20,13	8,75	**28,88**	29,30
(F) Building materials, water mains, sewage system and track and yard enclosing materials and signal and interlocking materials, etc.	4	18	22	2,15	**2,37**	2,37
(G) Stores, hardware, copper, tin and zincware, all leather canvas and India rubber in bulk, materials painters' stores, timber and fuel oil, etc.	22	93	1,15	24,15	**25,30**	24,66
(H) Electrical and train and locomotive lighting plants and materials, etc., and telegraph and telephone equipment	20	95	1,15	1,51	**2,66**	2,99
All other stores	8	1,86	1,94	18,84	**20,78**	25,09
TOTAL	12,17	13,43	25,60	64,43	**90,03**	92,15

The detailed figures are given in Appendix A of Volume II of this Report.

115. Intake of indigenous equipment and stores.—The total payments made for railway equipment and stores during 1953-4 amounted to Rs. 90,03·07 lakhs. Of this the value of direct imports was Rs. 12,17·31 lakhs and imported material purchased in India accounted for Rs. 13,42·90 lakhs. Thus the imported material accounted for Rs. 25,60·21 lakhs. The balance of payments were for equipment and stores of Indian manufacture or of indigenous origin which accounted for 71·56 per cent of the total expenditure. The comparative figures for 1952-3 and 1953-4 are given below:

TOTAL VALUE OF PURCHASES OF STORES

(Figures in lakhs of rupees.)

Year	Amount of payments made for equipment and stores imported direct	Amount of payments made for imported equipment & stores purchased in India	Amount of payments made for railway equipment & stores of Indian manufacture or of indigenous origin	Total payments made for imported and indigenous railway equipment & stores	Percentage of columns (4) and (5)
(1)	(2)	(3)	(4)	(5)	(6)
	Rs.	Rs.	Rs.	Rs.	
1952-3	15,49·06	12,50·75	64,14·90	92,14·71	69·62
1953-4	**12,17·31**	**13,42·90**	**64,42·86**	**90,03·07**	**71·56**

116. Rationalized distribution of surplus stock.—Surplus stores (*i.e.*, stock in excess of 12 months *plus* consumption during the procurement) stood on 31 March 1951, at Rs. 10·19 crores. By 31 March 1954, the surplus

stock had been brought down to Rs. 4·50 crores even after taking into account the further items declared as surplus after 31 March 1951. In addition to the actual reduction in accumulated surplus stocks, certain items have been earmarked against future requirements.

117. Use of *khadi* on Railways.—The railways have been instructed to take steps to make the maximum use of *khadi* (as distinct from hand-loom and mill-made cloth), for meeting their requirements of articles like durries, bed-sheets, table-covers, dusters, hand-towels, etc., and in order to ensure purchase of genuine *khadi* they have been asked to obtain their supplies through the All-India *Khadi* and Village Industries Board.

118. Stores balances.—The statement below compares the total balances at the end of 1953-4 with those at the end of 1952-3. These figures are provisional as the accounts for the period 1 April to 14 August 1947 have not so far been closed and the balances carried forward in the case of *ex*-States' Railways have not yet been finalized.

VALUE OF TOTAL STORES BALANCES ON RAILWAYS DURING 1952-3 AND 1953-4

(In lakhs of rupees)

	1952-3	1953-4
Central	11,09	**10,36**
Eastern	15,72	**13,22**
Northern	7,45	**7,27**
North Eastern	*7,51	**7,34**
Southern	*7,10	**6,72**
Western	6,01	**4,65**
Other railway units	*2,29	**2,80**
TOTAL	*57,17	**52,36**

* Revised.

There is an overall decrease of Rs. 4,81 lakhs in the balances at the end of 1953-4 as compared with the balance at the end of 1952-3. The main reasons to which the decrease can be attributed are disposal of surplus stock and less purchases on account of reduction in the number of cards dealt with in the grainshops and also the fall in the purchase price of certain commodities.

119. Disposal of scrap.—Considerable quantities of scrap material flow from line and workshops to various stores scrap yards every year. After proper sorting and segregation in scrap yards all such scrap is put up before a Survey Committee representing various consuming departments with a view to explore possibilities of their reclamation or conversion for use by departments of the railways. The scrap finally declared unusable and surplus to railways' requirements is disposed off to the trade.

The disposal of steel scrap is controlled by the Iron and Steel Controller who has, however, authorized the railways to supply re-rollable scrap to re-rollers in accordance with the allocation made by the Rerolling Mills Association of India under advice to him. Cast iron scrap surplus to the Railways' own requirements of foundries is allotted to the firms engaged in the manufacture of cast iron sleepers and other material for the railways. Such cast iron scrap as may be available with the railways after meeting above requirements is declared to the State Steel Licensing Authorities concerned who allot it to the outside foundries.

Non-ferrous scrap is not a controlled item. Most of it is used in railway foundries or is converted into standard alloy ingots for the railways' own use as far as possible. Only such low grade non-ferrous scrap as cannot be used in railway foundries or economically converted into standard alloys required for use on railways are disposed of by the railways by public auction or by inviting tenders.

Miscellaneous scrap, including ferrous scrap, which the Iron and Steel Controller is unable to distribute and other scrap, such as, timber off-cuts, etc., are generally disposed of by the railways by public auction or by inviting tenders.

The total value of scrap held by railways on 31 March 1954 was in the region of Rs. 2 crores.

120. Timber supply position.—The supply position of timber deteriorated during the year under review partly due to transport difficulties and partly as a result of delay in inspection of timber owing to the quantities being tendered by suppliers for inspection without adequate programming. Steps are being taken to avoid similar difficulties in future.

The table below shows the quantities of timber demanded and the quantities passed after inspection during 1953-4:

SUPPLY OF TIMBER AGAINST INDENTS DURING 1953-4

Period	Quantity indented (tons)	Quantity passed (tons)
II Quarter 1953	28,674	5,886
III Quarter 1953	11,244	4,652
IV Quarter 1953	9,185	4,382
I Quarter 1954	6,116	*7,549
TOTAL	55,219	22,469

* Includes arrears.

121. Wooden sleeper purchase organisation.—The Sleeper Groups purchased the following wooden sleepers during 1953-4:

	Broad	Metre	Narrow	Specials
(1) Northern group	223,993	378,162	81,852	68,356
(2) Southern group	86,266	260,618	7,514	29,202
(3) Eastern group	187.376	658,458	165,894	98,710
TOTAL	497,635	1,297,238	255,260	196,268

The total expenditure of the sleeper groups during the year, together with the value of the sleepers and specials purchased by them, are given below:

	Expenses of the group	Value of purchases
	Rs.	Rs.
(1) Northern group	94,913	79,79,510
(2) Southern group	45,300	44,71,289
(3) Eastern group	3,34,966	122,00,622
TOTAL	4,75,179	2,46,51,421

The Sleeper Pool Organization also arranged inspection of approximately 111,820 tons timber and 3,210 tons of planks and boards against orders placed by Director General, Supplies and Disposals for Railways.

The average price of first class sleepers in the various sleepers groups was as under:

	Broad gauge per sleeper F.O.R.				Metre gauge per sleeper F.O.R.		
	Rs.	A.	P.		Rs.	A.	P.
(1) Northern group—							
Private contractor	18	0	0	(Boxed heart)	8	0	0
U. P. Forests	18	0	0		7	15	0
(2) Southern group—							
Private contractor	19	14	1		12	10	8
Bombay forests	14	8	0		7	4	0
Travancore forests	21	0	0		10	0	0
Mysore forests	—	—	—		8	8	0
(3) Eastern group	18	0	2		7	14	7

At Dhilwan creosoting plant on the Northern Railway 181,528 broad gauge, 78,690 metre gauge, 39,595 narrow gauge sleepers of coniferous species and 1,886 three-foot-ends of *chir* sleepers were treated during the year with a mixture of 40 per cent creosote and 60 per cent liquid fuel oil. The details are given in the statement below.

Besides these, 56 *chir* poles were treated for the Punjab (Public Works Department) Electricity Branch. *Chir* sleepers were treated by the Rueping process and the *kail* by the Full-cell process. 56 *chir* poles for Public Works Department were treated by the Full-cell 50 per cent creosote and 50 per cent liquid fuel oil.

At Naharkatiya plant on the North Eastern Railway, 56,680 broad and 76,548 metre gauge sleepers of *hallong, makai, jutuli, sani, koroi, hellock* and *nahar* species were treated during the year with creosote and (sleeper and furnace) oil in 50:50 proportion. The average absorption was 6·13 lb. per cft. and the cost of treatment per sleeper was Rs. 5-12-0 per broad gauge and Rs. 2-12-0 per metre gauge sleeper.

SLEEPERS TREATED IN CREOSOTING PLANT AT DHILWAN DURING 1953-4

	Chir				*Kail*	Chir poles *for* *P. W. D.*	For Ceylon Government Rly. *Chir*	For Ceylon Government Rly. *Kail*
	BG	MG	NG	Ends 3ft.	NG		BG	BG
(i) Number of sleepers treated.	1,61,529	78,690	39,095	1,886	500	56 poles.	15,000	4,999
(ii) Cost of treating per sleeper.	RS. 2-10-9	1-6-11	1-4-9	1-0-0	1-6-4	52-2-7 per pole	3-10-11	3-11-5
(iii) Average absorption of mixture per cft. in lbs.	5·30				5·84	22·74	5·30	5·84

122. Purchase of wooden, cast iron and steel sleepers.—The number of sleepers of various types purchased by Government Railways during the year is given below:

	Wooden Nos.	Cast Iron Nos.	Steel Nos.	Total Nos.
Broad gauge	523,817	219,288	157,668	900,773
Metre gauge	1,314,588	75,173	216,383	1,606,144
Narrow gauge	215,647	—	—	215,657
	2,054,052	294,461	374,051	2,722,564

The relative position of the various kinds of sleepers may be seen from the following percentages based on the total number of sleepers on track on Government Railways:

RELATIVE POSITION OF VARIOUS KINDS OF SLEEPERS

	Wood	Cast Iron	Steel
1952-3 (revised figures)			
Broad gauge	19·73%	52·53%	27·74%
Metre gauge	70·30%	4·11%	25·59%
1953-4			
Broad gauge	23·2%	49·8%	27·00%
Metre gauge	73·5%	4·1%	22·40%

123. Cement supply situation.—The Ministry of Commerce and Industry make quarterly allotments of cement based on the estimated production of the quarter, but it is observed that the actual supply made is generally somewhat less than the allotment.

During the year 1953-4, the Ministry of Commerce and Industry made an allotment of 183,270 tons of cement against the total requirements of Railways of 276,403 tons.

Although the total allotment made in the year was more than last year, the percentage allotment against the demand decreased from 85 to 66 per cent, the demand having increased from 212,836 tons to 276,403 tons.

124. Steel supply situation.—The overall supply position of steel during the year under review continued to be difficult.

Though the Ministry of Commerce and Industry covered the Railways' requirements by allotting necessary quotas, the actual supply of steel against such quotas was often much delayed. The Wagon builders and Railways were hard put with respect to the supply of certain categories of steel, such as, sheets, mild steel plates, panel plates, high tensile steel, spring steel and some sections like RBRR angles, door striking bars, etc.

The indigenous production not being sufficient to meet the railways' requirement in full, the Ministry of Commerce and Industry arranged for the import of panel plates, plates, and spring steel, billets to make up for the shortage but the supplies arranged did not generally materialize in time.

The supply of steel sleepers, rails and fish plates continued to be unsatisfactory.

125. Supply position of vital equipment and stores—

Imported stores.—The following are the important stores for which crossmandates were issued to Director General, India Stores Department, London, during 1953-4:

(1) Spares for electric locomotives,
(2) Axle steel,
(3) Wheels with tyres and axles,
(4) Spares for caprotti and lentz valve gear,
(5) Ferro chromium,
(6) Plate glass,
(7) Belting laminated hendry's,
(8) Belting for train lighting dynamos,
(9) For signals,
(10) Fire box tube plate,
(11) Thermic spyhon,
(12) Exhaust fans,
(13) Truck cannon box,
(14) Wagon weigh bridges,
(15) Pins split M.S. taper,
(16) Ribbed glasses.

The general supply position of imported stores *ex* United Kingdom improved slightly during the period under review. However, in a number of cases delay occurred owing to lack of raw materials, etc., and factors beyond suppliers' control.

The important items of railways which were crossmandated to India Supply Mission, Washington during 1953-4 were as under:

(1) Loco spares,
(2) Spares for generator sets,
(3) Cast steel bed frames,
(4) Die sinking machine,
(5) Piston rings,
(6) Wireless equipment,
(7) Spares for diesel engine,
(8) Frame stretchers front,
(9) Spares for compressors,
(10) Wood working machines.

The general supply position of the above stores has been fairly satisfactory.

Indigenous stores.—The position regarding vital equipment and stores of indigenous manufacture during 1953-4, is given below:

Wheels, tyres and axles.—As in previous years, Messrs. Tatas are the only indigenous manufacturers of these stores. Their capacity was fully utilized against the Wagon Building Programme and the maintenance requirements of Indian Railways. The Rolling Programme was drawn up every quarter and supplies arranged on an equitable basis for all the Indian Railways and other private companies commensurate with the urgency of the requirements. Demands for axles were more than the capacity available and supplies were made on the basis of quotas fixed.

Steel castings.—The indigenous capacity for light and medium weight castings, was sufficient but the quality of the product was not satisfactory with the result that the percentage for rejections was high and the deliveries were not up to date. As regards heavy castings, capacity is still to be developed.

Permanent way materials.—Supply position of steel continues to be the limiting factor in the production of track materials. There was, therefore, no appreciable improvement in the delivery of fabricated articles to the Railways.

Structurals.—Shortage of steel plates continued to be the main bottleneck in the manufacture and supply of structurals against railway demands.

Fire bricks.—Supply position of this store has been fairly satisfactory.

Cast iron pipes and special.—The indigenous capacity being very limited could not cope with the demands received by the Director General (Supplies and Disposals). The available capacity was booked. The delivery against the Indian Railways' demands was, therefore, affected. With the amalgamation of the Steel Corporation Bengal, and the Indian Iron and Steel Company, supply of these stores improved slightly.

126. Theft of railway property.—Fifteen cases of theft of stores and other valuable materials amounting to Rs. 132,590 were reported in the course of the year by Indian Railways. Twelve of these cases were reported to the Police for investigation. Two cases were closed as undetected after investigation. In four cases the Police apprehended the culprits and were also able to recover some stolen material in two out of the cases. In one case, they considered certain staff responsible and recommended departmental action for want of evidence to prosecute them, which is being taken. Police investigations are still in progress in the remaining five cases reported to them. The other three cases are being enquired into by departmental committees.

127. Theft and damage to carriage fittings.—One of the main difficulties experienced by railways in the maintenance of their stock was the theft of carriage and wagon fittings from running or stabled trains. Thefts of train lighting equipment like dynamo belts, bulbs and seat cushions, hat pegs, etc., were particularly heavy in spite of special efforts taken by the railways and the police.

CHAPTER IX

STAFF

128. Number of staff.—The total number of employees (permanent and temporary) on all Indian Railways and in the office of the Railway Board and other offices subordinate thereto, excluding staff employed on construction at the end of 1953-4 was 964,061 as compared with 927,522 at the end of 1952-3. The total route mileage at the end of the year was 34,406.

129. Cost of staff.—The statement on the next page shows the number and cost of all staff, Classes I, II, III and IV, permanent and temporary, open line and construction, employed on Government Railways during the years 1952-3 and 1953-4. The labour employed by contractors is not included.

A comparison of the figures for 1953-4 with those for the previous year shows that the total number of staff employed on the open line of Government Railways increased by 36,448 during the year, while the number of construction staff decreased by 1,305. The increase in staff is mainly due to gradual implementation of the Adjudicator's award, appointment of temporary staff in connection with Kumbh *mela,* etc., and taking over the *ex*-Barsi Light Railway.

The total cost of staff including that of staff on loan from the Indian Audit and Accounts Service increased by Rs. 9,03,94,113 during the year as compared with the previous year. The increase in cost is chiefly due to increase in the number of staff, annual increments, contribution to Provident Fund and special contribution to Provident Fund and Gratuities and increased allowances due to merger of a part of dearness allowance with pay.

130. Direct recruitment to the superior railway services.—Fifty-eight appointments were made to the superior railway services by direct recruitment during the year. The details by departments are given below:

Department	*Number*
(1) Civil Engineering	6
(2) Signal Engineering	1
(3) Electrical Engineering	3
(4) Transportation (Traffic) and Commercial	12
(5) Transportation (Power) and Mechanical Engineering	20
(6) Accounts	4
(7) Stores	1
(8) Others	11
TOTAL	58

131. Promotions to superior railway services.—Twenty-six promotions were made during the year from Class II and Class III Services. The promotions were made against existing vacancies.

132. Railway Service Commissions.—In order that requirements of the Railways for prompt recruitment in the various categories of Class III service could be met effectively, it was decided to increase the number of Railway Service Commissions from two to four. Accordingly, two new Commissions were set up at Madras and Allahabad towards the end of 1953.

The jurisdiction of the Commissions was revised as follows:

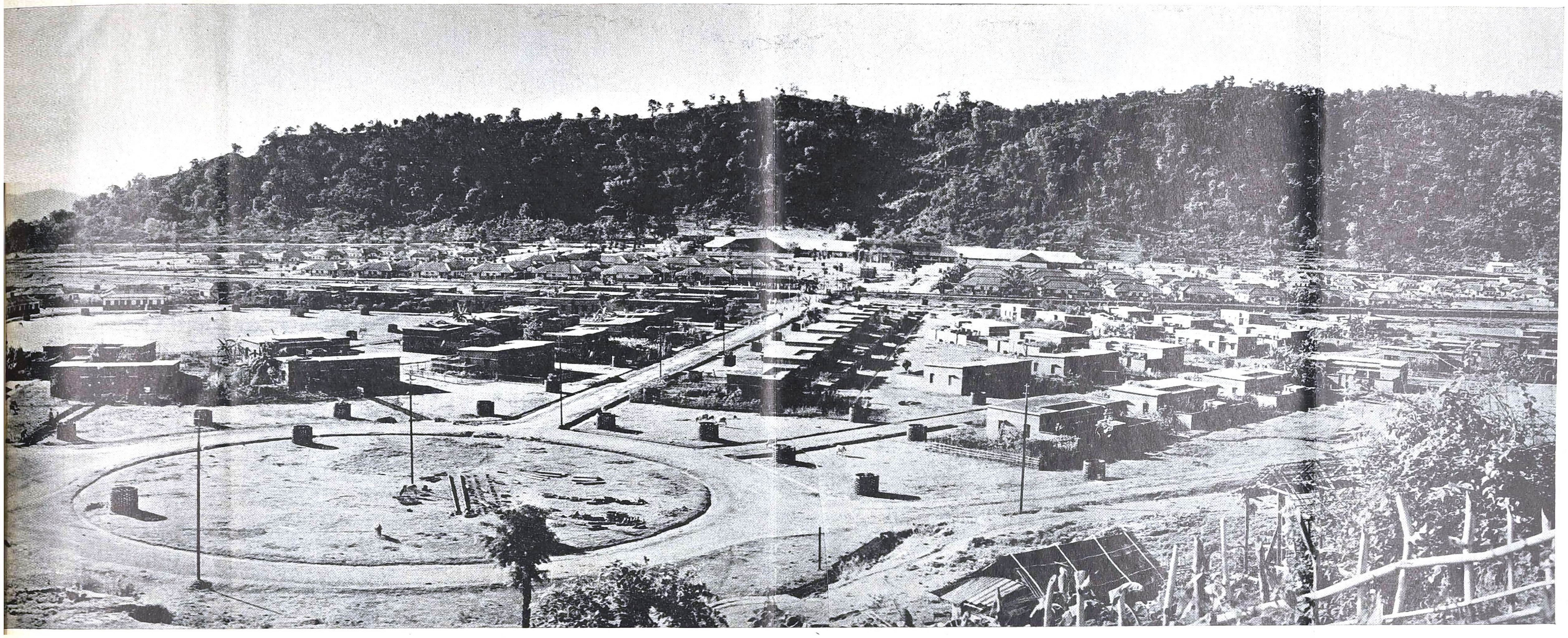
Calcutta Commission.—Eastern Railway, Pandu region of the North Eastern Railway and Chittaranjan Locomotive Works.

Bombay Commission.—Western Railway and Central Railway, excluding Secunderabad Division.

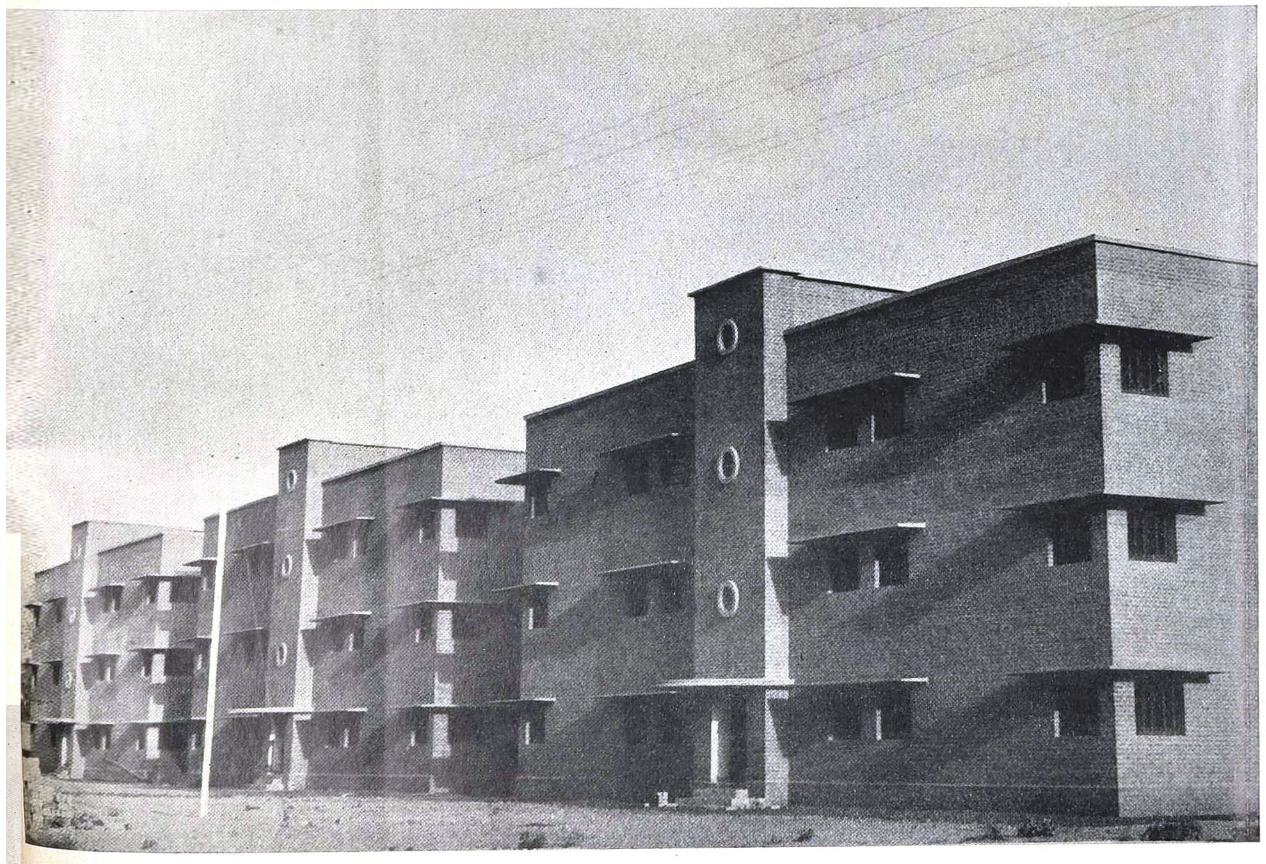
Allahabad Commission.—Northern Railway, North Eastern Railway excluding Pandu Region, Ganga Bridge Project and the office of the Deputy Director, Rail Movement, Moghalsarai.

Madras Commission.—Southern Railway, Integral Coach Factory, Perambur and the Secunderabad Division of the Central Railway.

During the year, the Commissions at Calcutta, Bombay, Allahabad and Madras recruited 6,424; 6,996; 1,470 and 1,126 candidates respectively for the railway services.



Left: PANDU REGIONAL HEADQUARTERS, MALINGAON COLONY, WITH THE NORTH EASTERN REGIONAL ADMINISTRATIVE OFFICE IN THE BACKGROUND BELOW *KAMAKHYA* TEMPLE HILL. (ON BOTH PAGES)



Above: MODERN FLATS FOR NON-GAZETTED STAFF AT BADSHAHNAGAR (LUCKNOW)—PART OF THE EXTENSIVE PROGRAMME OF BUILDING STAFF QUARTERS ON INDIAN RAILWAYS

Above: FLATS FOR OFFICERS AT BADHWAR PARK, COLABA—WESTERN RAILWAY

NUMBER AND COST OF STAFF ON GOVERNMENT RAILWAYS DURING 1952-3 AND 1953-4

Railway	Year	NUMBER OF STAFF ON 31 MARCH						Staff on loan from the Indian Audit and Accounts Service	†COST OF STAFF DURING THE YEAR ENDING 31 MARCH			
		OPEN LINE			CONSTRUCTION							
		Classes I & II	Classes III & IV	Total	Classes I & II	Classes III & IV	Total		Classes I & II	Classes III & IV	Total	Total including staff on loan from the Indian Audit and Accounts Service
Central	1953	369	167,302	167,671	..	..	..	1	51,36,841	21,90,49,355	22,41,86,196	22,42,20,396
	1954	**382**	**173,924**	**174,306**	..	..	..	**1**	**50,43,372**	**24,08,58,488**	**24,59,01,860**	**24,59,42,940**
Eastern	1953	528	247,845	248,373	..	136	136	..	74,67,718	35,39,25,315	36,13,93,033	36,13,93,033
	1954	**541**	**250,578**	**251,119**	**16**	**249**	**265**	..	**68,76,721**	**36,79,17,602**	**37,47,94,323**	**37,47,94,323**
Northern	1953	375	131,143	131,518	7	1,438	1,445	..	38,05,335	17,74,84,403	18,12,89,738	18,12,89,738
	1954	**372**	**140,155**	**140,527**	**12**	**1,029**	**1,041**	..	**44,50,596**	**19,14,93,280**	**19,59,43,876**	**19,59,43,876**
North Eastern	1953	300	107,570	107,870	..	..	..	1	34,11,781	13,51,93,153	13,86,04,934	13,86,12,638
	1954	**316**	**112,449**	**112,765**	..	..	..	**1**	**35,96,862**	**14,59,40,131**	**14,95,36,993**	**14,95,45,837**
Southern	1953	348	146,770	147,118	3	358	361	1	42,26,397	18,56,98,529	18,99,24,926	18,99,55,206
	1954	**359**	**151,746**	**152,105**	..	**244**	**244**	**1**	**45,70,397**	**19,80,16,181**	**20,25,86,578**	**20,26,17,332**
Western	1953	361	109,659	110,020	..	1,487	1,487	..	39,91,804	14,83,66,356	15,23,58,160	15,23,58,160
	1954	**352**	**116,800**	**117,152**	..	**574**	**574**	..	**39,73,355**	**16,31,76,367**	**16,71,49,722**	**16,71,49,722**
Railway Board and other Railway offices.	1953	166	8,110	8,276	..	..	..	2	26,52,554	1,21,47,142	1,47,99,696	1,48,70,145
	1954	**200**	**9,121**	**9,321**	..	..	..	**1**	**30,53,183**	**1,39,95,216**	**1,70,48,399**	**1,70,99,399**
Total	1953*	2,447	918,399	920,846	10	3,419	3,429	5	3,06,92,430	1,23,18,64,253	1,26,25,56,683	1,26,26,99,316
	1954	**2,522**	**954,773**	**957,295**	**28**	**2,096**	**2,124**	**4**	**3,15,64,486**	**1,32,13,97,265**	**1,35,29,61,751**	**1,35,30,93,429**

* Represents revised figures for 1953 due to changes made by the Railway Administrations in the figures published last year.
† The figures of cost of all Railways represent pay, allowances, passages, provident fund contributions, gratuities and the grainshop concessions.

133. Confirmation of temporary staff.—Railway Administrations continued to review temporary posts with a view to converting them into permanent posts and to confirming temporary staff in available vacancies. For this purpose Railway Administrations were asked to depute a team of two officers on special duty to review all temporary posts which could be converted into permanent posts. The position of conversion of temporary posts into permanent and the confirmation of temporary staff as on 31 March 1954 was as follows:

(i) Total number of temporary posts converted into permanent during the year	10,574
(ii) Total number of temporary staff confirmed during the year	22,816
(iii) Total number of temporary staff remaining unconfirmed (this excludes (1) staff under training or on probation, (2) workshop staff with less than three years service, and (3) casual labour)	89,916
(iv) Number of temporary staff under training or probation	20,252
(v) Number of staff whose posts were not likely to be required permanently	56,955
(vi) Number of workshop staff with less than three years service	16,058

134. Railway Corruption Enquiry Committee.—A Committee of Members of Parliament was constituted by the Minister for Railways in October 1953 to enquire into the prevalence of corruption on Indian Railways with Pandit H. N. Kunzru as Chairman, and the following as members:

(1) Shri Shah Nawaz Khan.
(2) Dr. W. S. Barlingay.
(3) Shri K. S. Hegde.
(4) Shri K. L. More.
(5) Dr. A. Krishnaswami.
(6) Shri K. Raghuramiah.
(7) Shri P. S. Rajagopal Naidu.
(8) Shri Ram Subhag Singh.
(9) Shri Satish Chandra Samanta.
(10) Shri Sarangadhar Das.
(11) Shri M. D. Upadhyay.

The terms of reference given to the Committee were to enquire into and report on:

(i) the extent of corruption prevalent among various categories of railway employees in their dealings with the public;
(ii) methods adopted by the staff concerned;
(iii) causes of corruption;
(iv) responsibility of the using public;
(v) defects, if any, in rules and regulations which leave loopholes for corruption; and
(vi) remedial measures, both administrative and legal, to eradicate this evil in all its aspects.

The terms of reference have been widened to include vending and refreshment room contracts, engineering contracts, thefts and other allied matters.

Pandit H. N. Kunzru, however, resigned the chairmanship of the Committee in February 1954 on being appointed as a member of the States Reorganization Commission and Acharya J. B. Kripalani, M.P. was appointed Chairman.

The Committee issued a questionnaire to elicit the views of railway users and to collect material for their investigation.

135. Railway and labour.—The relations between the Railway Administrations and Labour continued to be cordial during the year under review.

The two premier railway labour organizations of the country, the All India Railwaymen's Federation and the Indian National Railway Workers' Federation agreed to merge into a single all-India body—the National Federation of Indian Railwaymen. The decision to merge the two Federations was taken by the Working Committees of both the Federations, meeting, separately, on 9 April 1953.

National Federation of Indian Railwaymen.—A meeting of the Working Committee of the National Federation of Indian Railwaymen was held at New Delhi on 30 and 31 July 1953, at which the Committee passed a number of resolutions. These related to the announcement made by the Government regarding the appointment of an *ad hoc* Tribunal, the demand

for a reference of certain additional outstanding issues to the Tribunal, facilities for collection of material by the Federation for submission to the Tribunal and the proposals made by the Railway Board for selection posts.

136. Permanent Negotiating Machinery for settlement of disputes.—The Permanent Negotiating Machinery which was set up on railways with effect from 1 January 1952, with a view to maintaining contact with labour and resolving disputes and differences which may arise between them and the Administration, functioned satisfactorily during the period under review. The reports for the year under review received from railways indicated that on all the six Indian Railways 40 meetings were held at Headquarters level and 999 meetings were held at District/Divisional/Workshop level. The subjects discussed covered a wide range. The meetings were conducted in a cordial and harmonious atmosphere.

At the second tier of the Machinery, a quarterly meeting was held between the Railway Board and the National Federation of Indian Railwaymen on 16 and 17 November 1953. Some of the more important subjects discussed at that meeting related to the confirmation of staff, provision of additional beds in existing T. B. Sanatoria for the use of railway staff, hours of work and overtime to running shed staff, and advances from the Provident Fund for meeting expenses of marriages and the provision of houses for railway staff under the Co-operative Housing Scheme.

Appointment of Ad Hoc Tribunal.—In the concluding portion of paragraph 128 of the last year's report it was stated that the demand of the Federation for reference to an *Ad Hoc* Tribunal, as provided for at the third tier under the Negotiating Machinery, on certain issues raised by them was under examination. Government accepted this demand and set up an *Ad Hoc* Tribunal. It was agreed that this Tribunal should consist only of Shri Shankar Saran, retired Judge of the Allahabad High Court, representatives of the Federation and the Railway Board being permitted to present their cases before him. It was also agreed to refer to this Tribunal five specified demands made by the Federation:

(1) The redistribution of grades for various categories of staff, decided upon as a result of the recommendations of the Joint Advisory Committee, should be reviewed.

(2) The revised scales of pay introduced for certain categories of staff in replacement of the prescribed scales of pay, originally allotted to those categories, should apply with retrospective effect from 1 January 1947 and arrears should be paid accordingly.

(3) The second proviso to Rule 203—R of the State Railway Establishment Code, Volume I, as modified by the orders of 21 August 1951, should be revised.

(4) Officiating pay should be admissible to staff working in the higher grades without the imposition of any minimum time-limit as to the duration of the period of working in the higher grades.

(5) The orders that in workshops leave, with or without allowances, shall not be for less than half a day, should be reviewed.

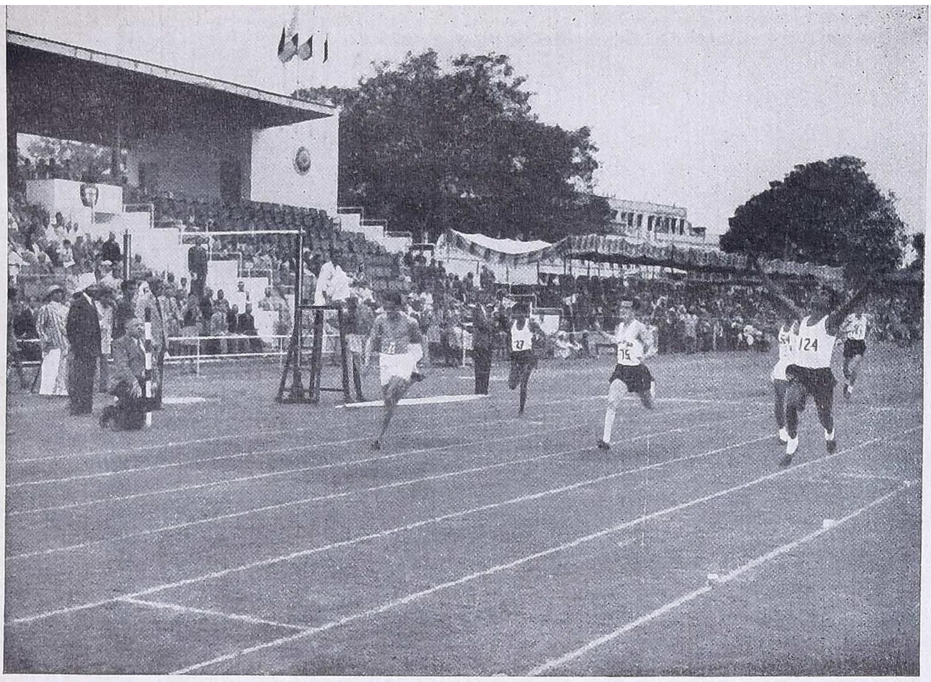
The Tribunal held its first sitting on 4 December 1953, discussed the procedure to be adopted and decided that the Federation should, in the first instance, furnish the particulars of their demands and the grounds on which these were based before the end of February 1954. At the close of the year the same details were still awaited.

137. Dearness allowance.—Orders were issued that dearness allowance granted to officers drawing pay exceeding Rs. 1,000 per mensem should be withdrawn in three stages spread over a period of two years commencing from 1 June 1953, the resultant rates are:

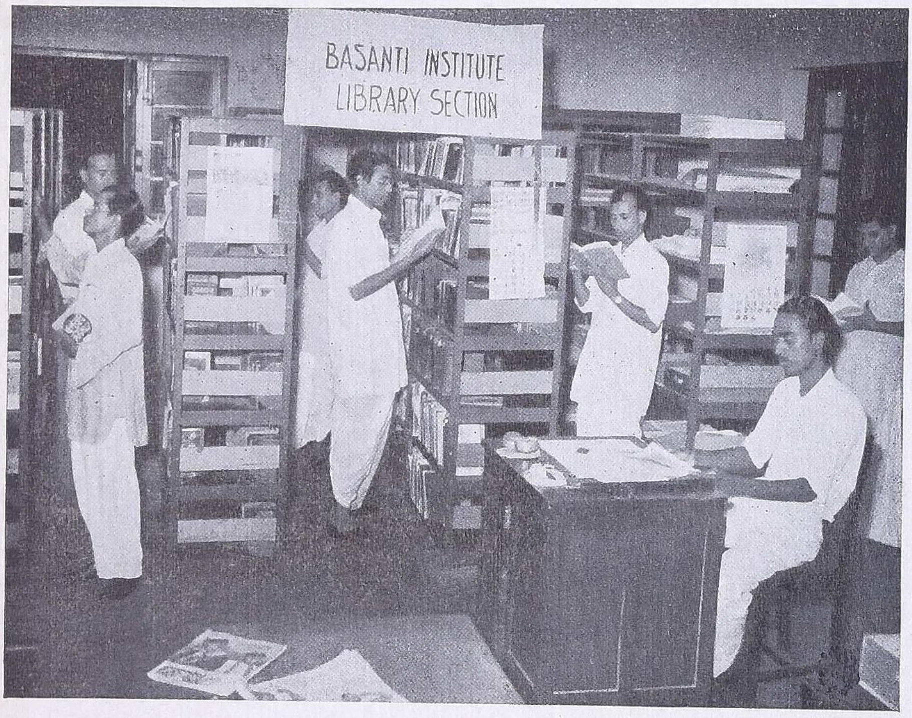
Pay	Dearness Allowance		
	From 1.6.53. to 31.5.54	From 1.6.54 to 31.5.55	From 1.6.55 onwards
Rs. 1,001—1,500	6 2/3% of pay or the amount by which the pay falls short of Rs. 1,100, whichever is more.	3 1/3% of pay of the amount by which the pay falls short of Rs. 1,100, whichever is more.	The amount by which the pay falls short of Rs. 1,100.
Rs. 1,501—2,000	Rs. 100	Rs. 50	*Nil.*
Above Rs. 2,000	The amount by which the pay falls short of Rs. 2,100.	The amount by which the pay falls short of Rs. 2,050.	*Nil.*

138. Railway grainshops.—Owing to continued improvement in the food position in the country, several State Governments relaxed control on the movement and distribution of cereals. The grainshop facilities were consequently withdrawn from the non-concessional card holders in those States. Due to the fall in the market price of grains reducing the monetary value of the grainshop concessions, many employees opted out of grainshop concessions in favour of full dearness allowance in cash. The result has been a considerable reduction in the activity of the grainshop organization, as indicated in the comparative statistics given below:

—	March 1953	March 1954	Remarks
(1) Number of shops functioning			
Static	265	213	Decrease due to reduction in the number of ration card holders.
Mobile	64	47	
Total	329	260	
(2) Number of staff served at the shops			
(a) At concessional rate	192,000	160,000	Decrease due to (i) staff becoming ineligible for grainshop concessions due to their pay reaching Rs. 250/- (ii) normal wastage by retirement etc. (iii) employees opting out in favour of cash dearness allowance due to fall in price of grains reducing the monetary value of the grainshop concessions; and (iv) closure of some grainshops due to fall in the number of customers.
(b) At controlled rate	187,000	92,000	Decrease due to withdrawal of the grainshops facility in de-rationed areas.
Total	379,000	252,000	
(3) Principal articles sold	1952-3 Mds.	1953-4 Mds.	
(a) Cereals—			
(i) At concessional rates	3,737,000	3,286,000	Decrease due to reduction in the number of card holders.
(ii) At controlled rates	1,771,000	763,000	
(b) Pulses	721,000	624,000	
(c) Cooking oil	325,000	281,000	
(4) Total purchases	Rs. 14,44,66,000	Rs. 10,87,07,000	Decrease mostly due to reduction in the number of card holders.
Total sales	7,38,48,000	4,79,00,000	
Cost price of commodities sold	14,28,84,000	10,83,92,000	
Direct loss on sales	6,90,36,000	6,04,92,000	
Indirect loss (cost of staff, freight and other overheads).	1,56,30,000	1,30,01,000	
(5) The average relief per concessional card holder was as follows:	March 1953	March 1954	
Zone X	Rs. As.	Rs. As.	
(Kanpur, Bombay and Calcutta)	31 11	33 0	
Zone A			
(Towns with a population of 250,000 and above excluding Kanpur, Bombay and Calcutta)	31 12	25 14	
Zone B			
(Towns with a population of 50,000 or more but less than 250,000)	33 2	28 7	
Zone C			
(All other localities)	33 1	29 2	

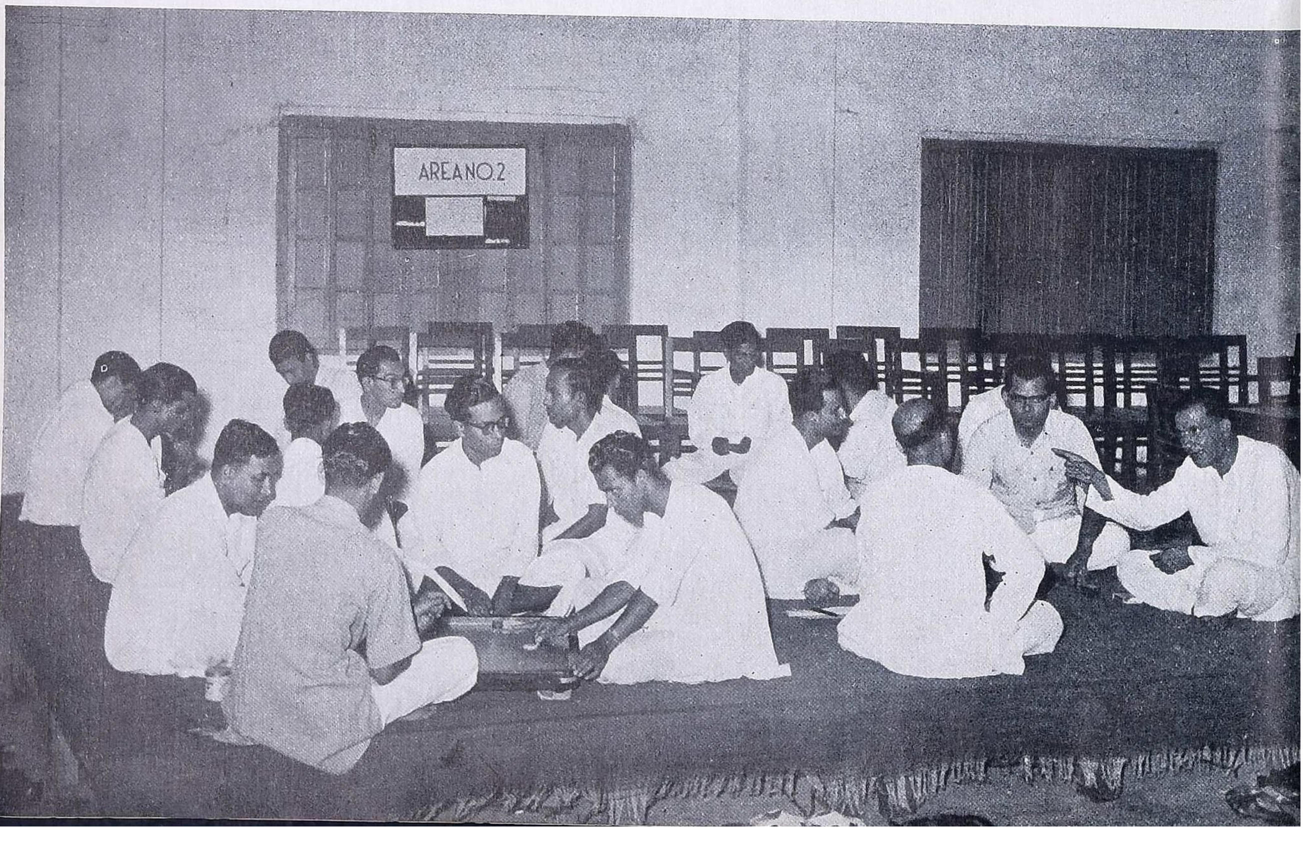


Left: A VIEW OF THE NEWLY CONSTRUCTED SPORTS STADIUM IN PAHARGANJ SPORTS GROUND IN NEW DELHI—NORTHERN RAILWAY

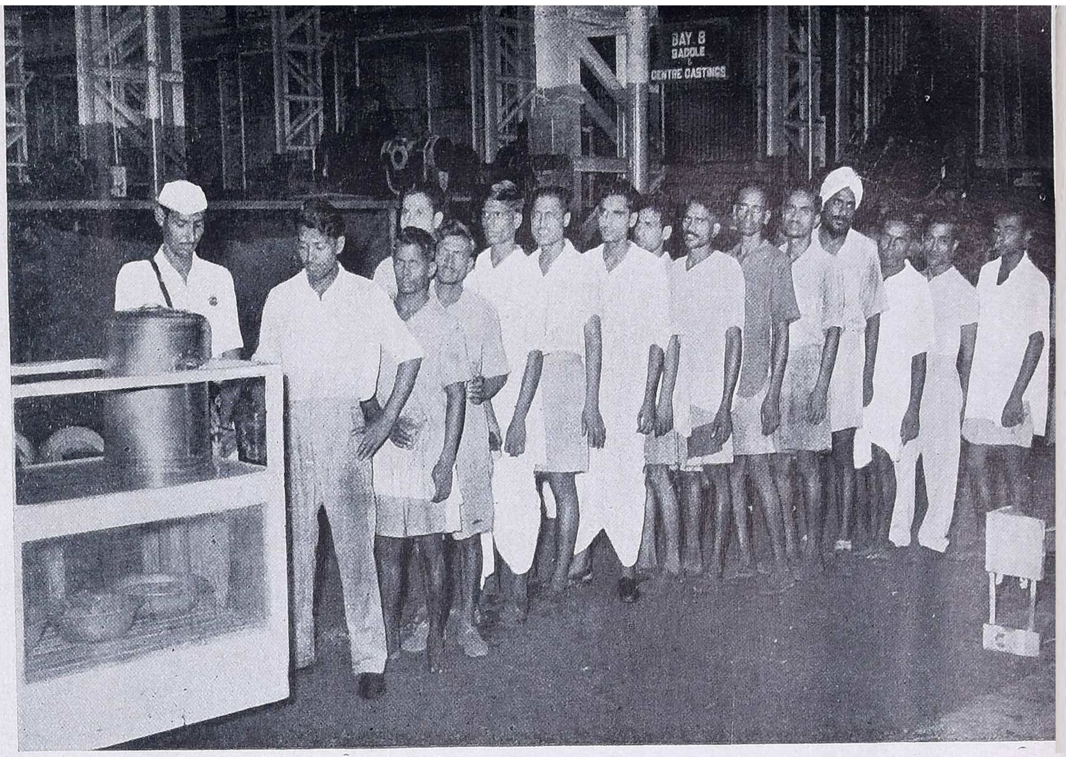


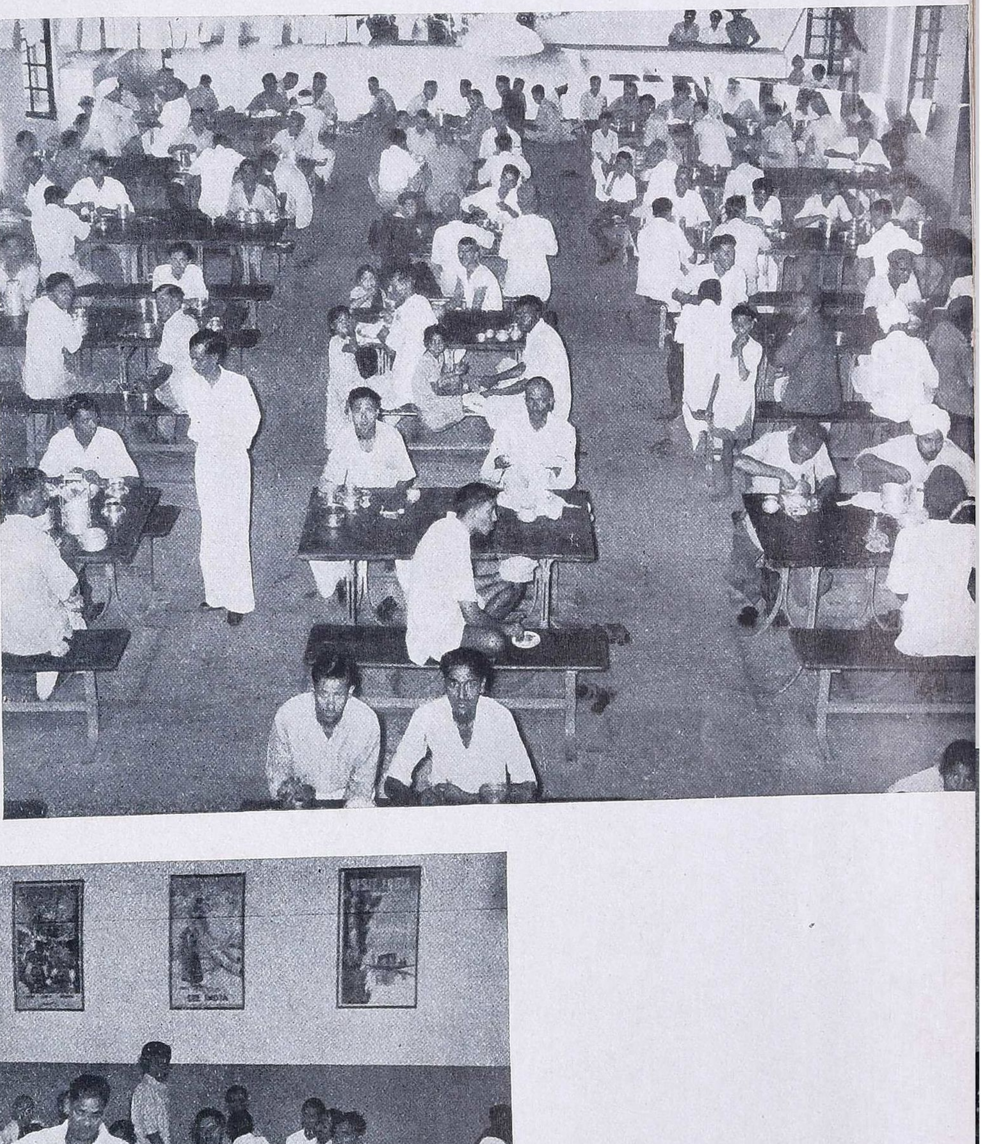
Left: LIBRARY SECTION OF THE BASANTI INSTITUTE—CHITTARANJAN LOCOMOTIVE WORKS

Below: STAFF PLAYING INDOOR GAMES AT AREA No. 2—CHITTARANJAN LOCOMOTIVE WORKS

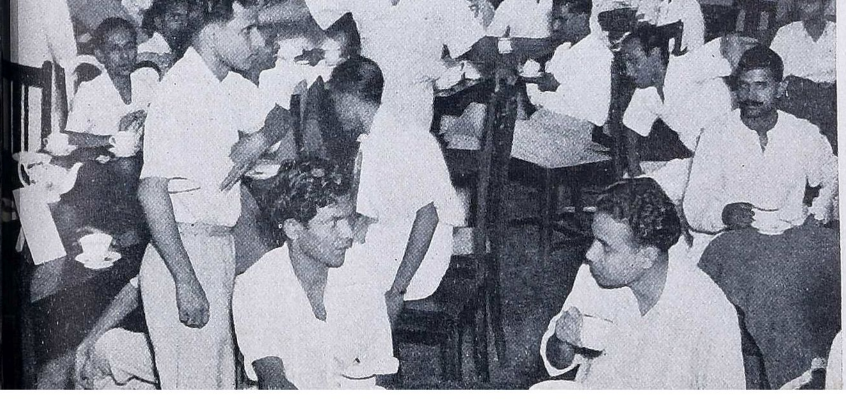


Right : WORKERS STANDING IN QUEUE FOR TEA AND SNACKS—CHITTARANJAN LOCOMOTIVE WORKS





Right : SOUTHERN RAILWAY WORKSHOP HUBLI, EMPLOYEES' TIFFIN SHED—NORTH GATE



Left: LUNCH HOUR AT STAFF CANTEEN, NORTH EASTERN RAILWAY HEAD QUARTERS ADMINISTRATIVE OFFICE, GORAKHPUR

139. Canteens.—The number of canteens on Railways which serve light refreshments, and in some cases cooked meals to workers increased from 101 to 107 at the close of the year under review. The average number of employees served by these canteens also increased from about 109,000 to 111,000 per day.

Orders were issued to Railways that railway employees' consumer co-operative stores should be encouraged to take over the management of the existing canteens excepting those which Government as employers have to provide and maintain in accordance with the rules framed by State Governments under section 46 of the Factories Act, 1948.

140. Co-operative stores.—The number of consumer co-operative stores, their membership, capital, funds and transactions, etc., are shown in the following table:

(i) Number of railwaymen's consumer co-operative stores (excluding those registered as joint stock companies and their branches) as on Indian Railways, on 31 March 1953		52
(ii) Number of railwaymen's consumer co-operative stores registered during 1953-4		18
(iii) Total membership of the co-operative stores as on 31 March 1954		31,946
(iv) Total working capital of the stores as on 31 March 1954	Rs.	9,29,388
(v) Total share capital of the co-operative stores as on 31 March 1954	„	4,43,532
(vi) Total reserve fund of the co-operative stores	„	1,54,775
(vii) Purchases made during 1953-4	„	36,47,721
(viii) Sales during 1953-4	„	37,92,373
(ix) Gross profit for 1953-4	„	1,52,724
(x) Net profit for 1953-4	„	18,000

There have been increases over last year, in the number of railwaymen's consumer co-operative societies and the total membership thereof and purchases and sales of commodities dealt with during the year under review. There were, however, decreases in the working and share capital and reserve funds due to the exclusion of the figures, against these heads, of the Mysore co-operative societies, Mysore, which has now exclusively confined its activities to the sphere of banking.

The year also records slight decreases in gross and net profits which have mainly resulted from the lifting of controls leading to price-competition and to the general fall in prices.

The question of re-organization of the old joint stock companies on the Railways and their conversion into co-operative societies taken up last year received further consideration in consultation with the Ministry of Law.

Up till the end of the year, 42 co-operative societies, against 29 of last year, have been provided with accommodation. Out of these, 35 were accommodated in the railway buildings, two in the condemned wagons and five in private rented buildings.

A sum of Rs. 2,495-5-0 by way of subsidy was paid during the year to five consumer co-operative societies while cases of other remained under examination.

Out of a sum of Rs. 18,000 earned by the societies in the shape of profits, a considerable portion again went back to the shareholders in the shape of dividends on the shares and rebates on purchases. Some societies also paid bonus to their employees to the extent of one month's salary.

The Railway Board have also decided to examine the question of consolidation of the activities of various co-operative societies/banks now functioning on the Railways so that they may be placed on scientific and rational lines to yield the maximum benefit to their clientele. Thirty-one co-operative credit societies/banks functioning on the Railways will be covered by this survey.

The report submitted by officer on special duty (co-operative societies) regarding organizing and supervising the working of co-operative societies on Railways was examined by the Railway Board during the year and the report, along with the Government decisions, was printed at the close of the year.

In pursuance of one of the decisions on the recommendations contained in the report for the appointment of six co-operative inspectors (one for each Railway), the State Governments were requested to recommend candidates from amongst their co-operative staff for selection by the Board, during the next year. These inspectors would assist the officer on special duty (co-operative societies) in implementing the Five Year Plan recommended by him for the enlargement of the co-operative activity on the Railways.

141. Labour legislation.—The Industrial Disputes (Amendment) Act, 1953, was enacted in December 1953. No other important legislation concerning labour was enacted during the year under review. The Industrial Disputes (Amendment) Act, 1953, provides for payment of compensation to workmen in the event of their being laid off by their employer or on their retrenchment.

142. Provision of quarters for railway staff.—In accordance with the Railway Board's policy, available resources were concentrated mainly on the construction of quarters for the essential category of staff who are required to live near the site of their work and for non-essential categories in places where private accommodation is not available.

During the year, the following quarters for various categories of staff were constructed on Indian Railways:

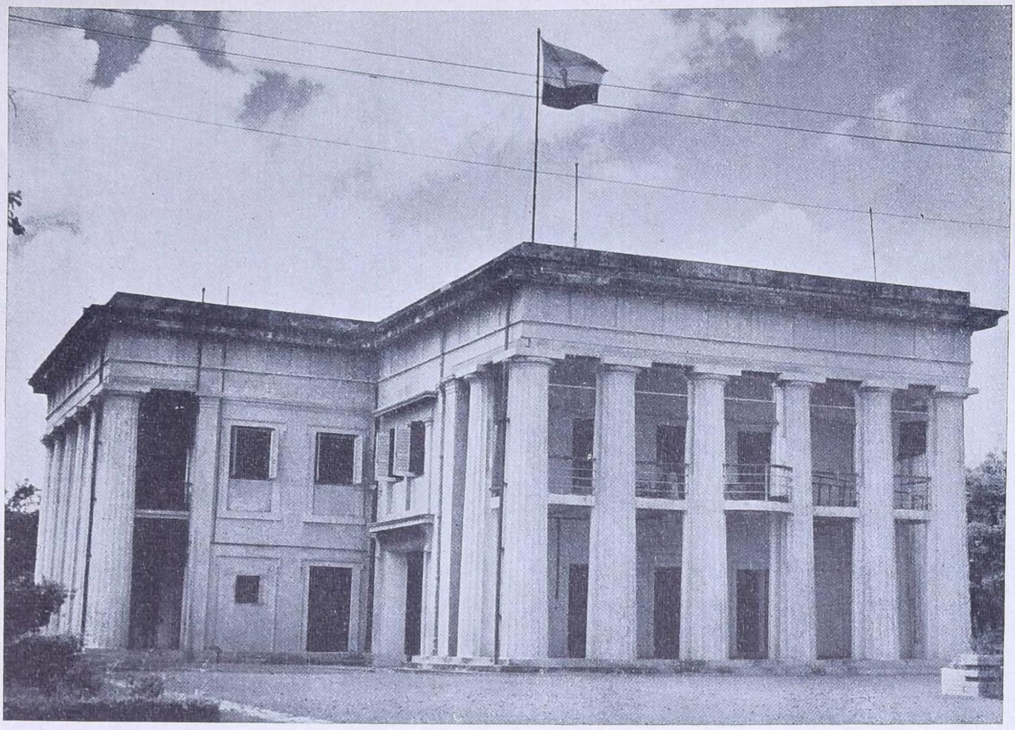
Railway	Type 'A'	Type 'B'	Type 'C'	Type 'D'	Type I	Type II	Type III	Type IV
1. Central	65	98	19	..	621	..	..	..
2. Eastern	1,301	447	12	..	..	..	..	..
3. Northern	307	19	53	27	1,409	146	7	31
4. North-Eastern	647	267	30	..	..	..	..	..
5. Southern	514	86	23	1	..	..	..	..
6. Western	..	..	..	..	461	251	5	1
Total	2,834	917	137	28	2,491	397	12	32

In addition to the above, 6 units open type, 30 units temporary quarters and 22 units officers bungalows were constructed on the Northern Railway and 42 flats for officers were constructed on the Western Railway.

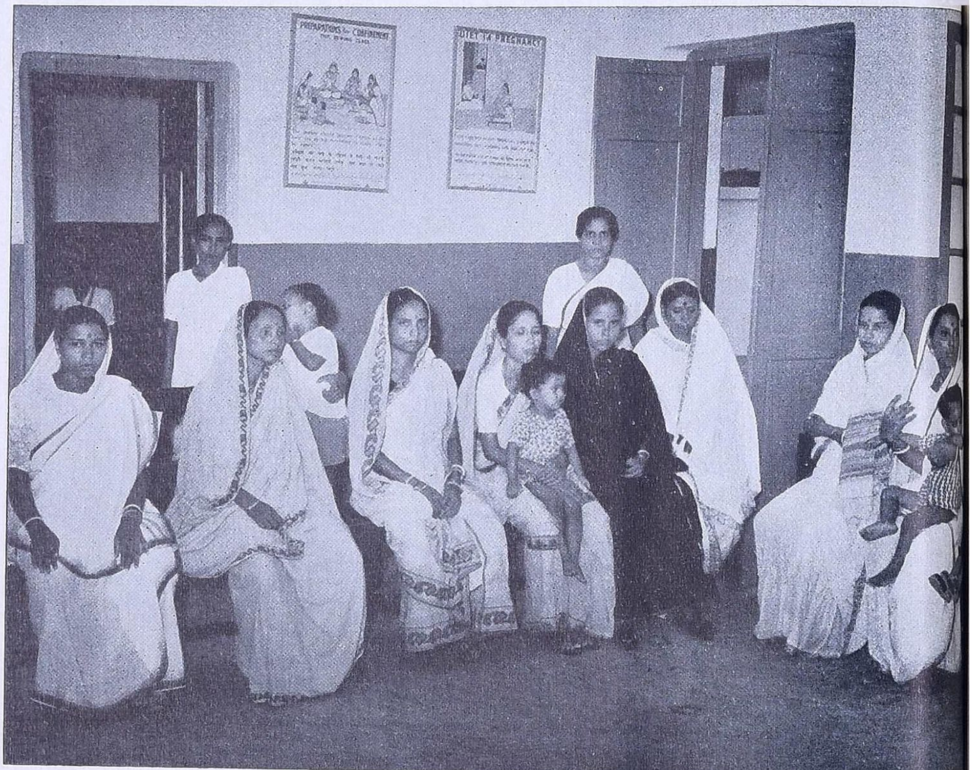
143. Progress in implementation of the Adjudicator's Award.—The implementation of the Adjudicator's Award in respect of hours of work and periodic rest was completed on all the *ex*-States Railway sections except *ex*-Bikaner and *ex*-Jodhpur Railway sections of the Northern Railway where it was in the course of completion and the *ex*-Mysore State Railway section of the Southern Railway in respect of loco running staff and out-door clerical staff. Necessary steps were taken by Railways to provide adequate leave reserves but some of the additional posts involved were in the process of being filled.

The Indian Railways (Amendment) Bill, 1953, to amend Chapter VI-A of the Indian Railways Act, 1890, with a view to giving statutory force to the Adjudicator's recommendations as accepted and implemented by Government, was passed by the Rajya Sabha (then known as the Council of States).

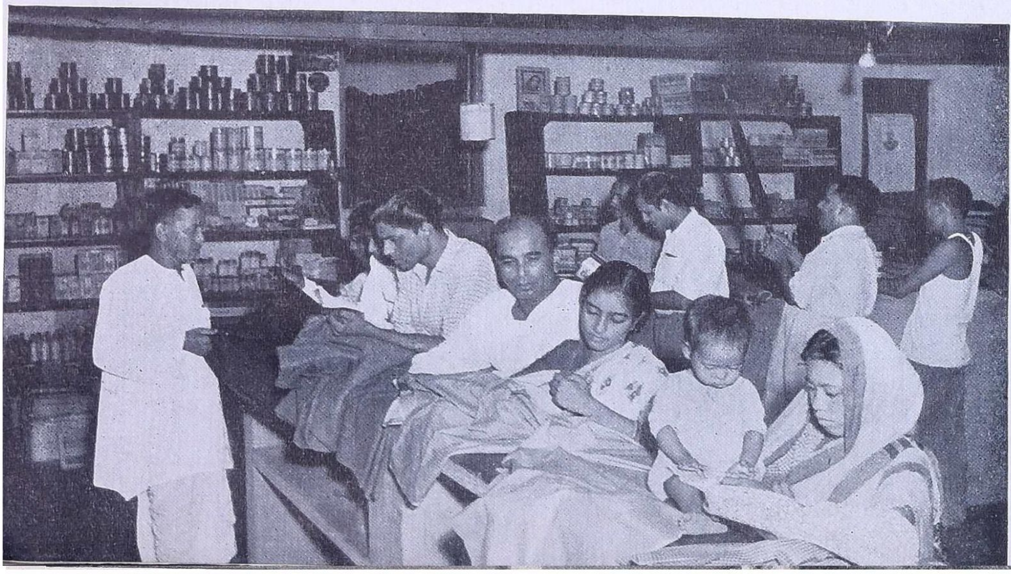
144. Progress in the implementation of the Central Pay Commission's recommendations.—The outstanding recommendations of the Joint Advisory Committee were implemented by railways in all cases except in regard to six categories which necessitated detailed investigation.



Left: ON 24 JULY 1953 THE PALATIAL BUILDING WHICH USED TO BE OFFICIAL RESIDENCE OF THE GENERAL MANAGER, BENGAL NAGPUR RAILWAY, WAS CONVERTED INTO A MODERN 60-BED HOSPITAL FOR THE RAILWAY STAFF



Right: LADY PATIENTS WAITING AT THE HEALTH CENTRE— CHITTARANJAN LOCOMOTIVE WORKS



Left: DISCERNING CUSTOMERS AT THE RAILWAY CONSUMERS' CO-OPERATIVE STORES, PANDU, NORTH EASTERN RAILWAY

The lists of stations where a compensatory allowance and a house rent allowance were sanctioned to railway staff were reviewed as a result of the 1951 census figures and necessary revision was made in the lists. The orders issued on 1 April 1953 were made effective from 1 October 1952.

With a view to bringing on as large a number of staff as possible to the prescribed scales and the liberalized leave rules, a further option to be exercised before the end of August 1953, was permitted to all railway staff to come on to the prescribed scales of pay or the liberalized leave rules.

Orders were issued laying down the following Central Pay Commission scales of pay for senior administrative posts on railways:

Senior Deputy General Managers, Chief Engineers, Chief Operating Superintendents, Chief Commercial Superintendents, Chief Mechanical Engineers, and Financial Advisors and Chief Accounts Officers.	1,800-100-2,000-125-2,250
Controllers of Stores, Chief Medical Officers, Chief Electrical Engineers, and Chief Signal and Tele-Communication Engineers.	1,600-100-1,800

145. **Activities of the medical department.**—A separate medical organization exists on each Indian Railway to look after the health of and provide medical aid to Railway servants and their families. There are 75 well equipped and adequately staffed railway hospitals at important centres with 3,069 beds and 399 dispensaries for about 950,000 railway employees and their dependants. In addition there are maternity and child welfare centres run by the Railway Staff Benefit Fund Committees with money provided from railway revenues to those committees.

The medical attendance and treatment and general health of the railway staff continued to receive attention during the year. The consideration of the general policy in regard to the future expansion of medical facilities was in progress.

It was decided to provide annexes or special wards for railway patients in certain selected existing T. B. sanatoria in the country for the treatment of T. B. patients amongst railway employees and their families. Two railway officers were appointed to make suitable recommendations in regard to the sanatoria where the annexes were to be provided.

Both curative and prophylactic activities of the medical departments on Railways continued satisfactorily during the year. On some railways additions and alterations to hospitals and dispensaries were carried out on a planned basis. Vaccination and inoculations on a mass scale were undertaken. Adequate sanitary and medical arrangements were made during *melas* at important pilgrim centres. Adequate measures including anti-larval, anti-adult personal protection and drug prophylaxis were taken to control malaria.

A large number of railway employees and their families besides the employees who are required to pass compulsory examination in 'first aid' as one of their service conditions, were trained during the year in this branch of social activity with the help of St. John Ambulance Brigades.

The problem of tuberculosis was tackled on some railways by providing improved types of houses, proper sanitary arrangements, maternity and child welfare arrangements, extensive facilities for tuberculin testing, B. C. G. vaccination and X-Ray examination and by arranging treatment of some of the tubercular patients amongst railway employees in T. B. sanatoria from the Staff Benefit Fund.

A statement summarising the activities of the medical department and showing the up-to-date equipment available on the Indian Railways during the year 1953-4 is given below:

STATISTICS OF MEDICAL AND HEALTH SERVICES ON RAILWAYS FOR THE YEAR 1953-4

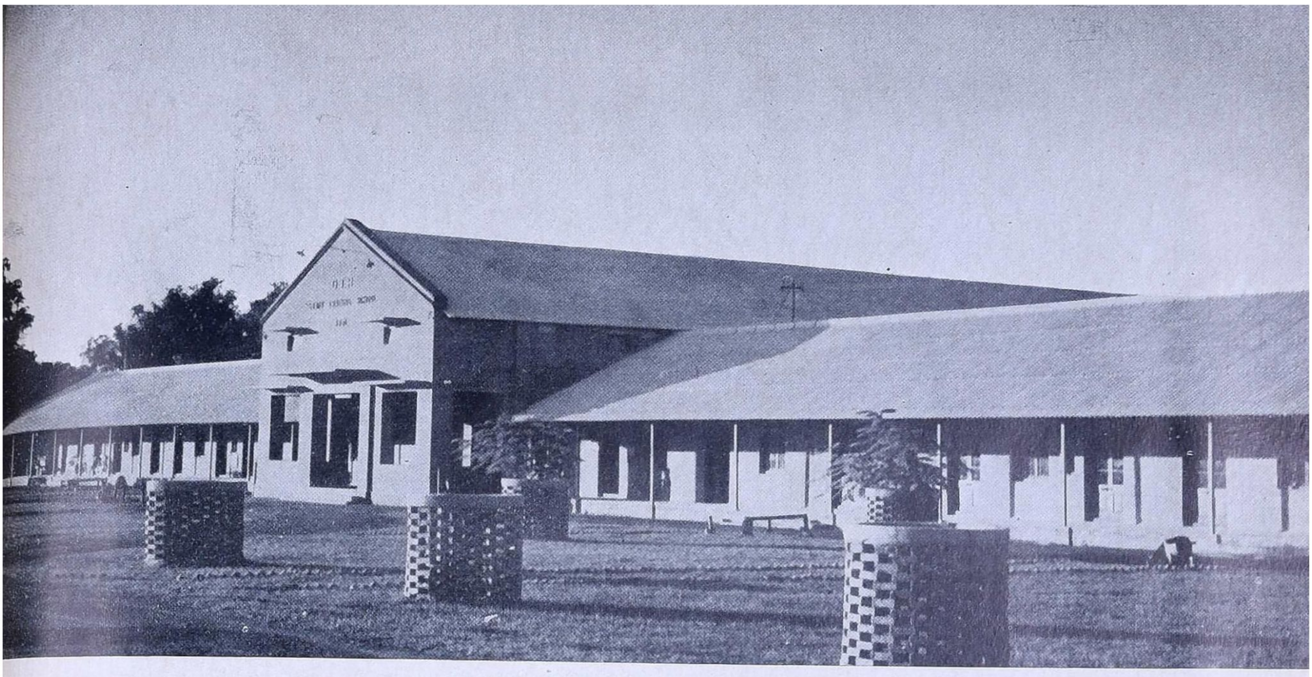
—	Central railway (1)	Eastern railway (2)	Northern railway (3)	North Eastern railway (4)	Southern railway (5)	Western railway (6)	Total (7)
(1) Number of railway staff	174,307	251,384	141,568	112,766	152,350	117,726	950,101
(2) Cost of medical services Rs.	27,35,523	41,47,000	25,40,951	23,00,000	24,31,660	20,24,383	1,60,79,526
(3) Cost of medical services per head of staff per annum Rs.	15·69	16·50	17·95	20·40	15·96	17·20	16·92
(4) Cost of health services Rs.	29,48,221	52,44,400	35,35,287	30,24,000	18,55,422	13,70,164	1,79,77,494
(5) Cost of health services per head of staff per annum Rs.	16·91	20·86	24·97	26·82	12·18	11·64	18·92
(6) Number of :							
(i) hospitals	12	15	17	11	12	8	75
(ii) dispensaries	52	109	54	65	64	55	399
(iii) beds	507	918	460	471	440	273	3,069
(7) Equipment :							
(a) Diagnostic apparatus—							
(i) X-Ray	8	19	6	5	6	10	54
(ii) Electrocardiogram	1	2	1	1	..	2	7
(b) Electro-medical and physio-therapy—							
(i) Diathermy	3	8	..	3	2	1	17
(ii) Short-wave	5	3	5	3	..	4	20
(iii) Infra Red	3	15	6	6	3	20	53
(iv) Panto-Stat	2	1	2	1	1	1	8
(v) Ultraviolet	8	12	6	5	2	21	54
(c) Massaging and rehabilitation apparatus	..	..	..	3	..	3	6

146. Railway Staff College, Baroda.—The Railway Staff College which was opened by the Minister for Railways at Baroda on the 31 January 1952 is now in a fair way to settling down to its task. Instruction is at present given to officers of all departments in regular courses of eight weeks duration in subjects such as General Rules, Transportation, Commercial, Accounts, Mechanical and Civil Engineering, Model Room practice, Statistics and Establishment by instructors on the staff of the college. Instruction in Railway Law is given by a lecturer from outside who gives a special course of lectures on the subject during every course.

Besides courses for probationery officers as well as refresher courses for junior officers, special lectures are also arranged periodically on selected subjects by lecturers who are specialists in their line, mainly for the benefit of senior officers for whom there is no regular course at the College.

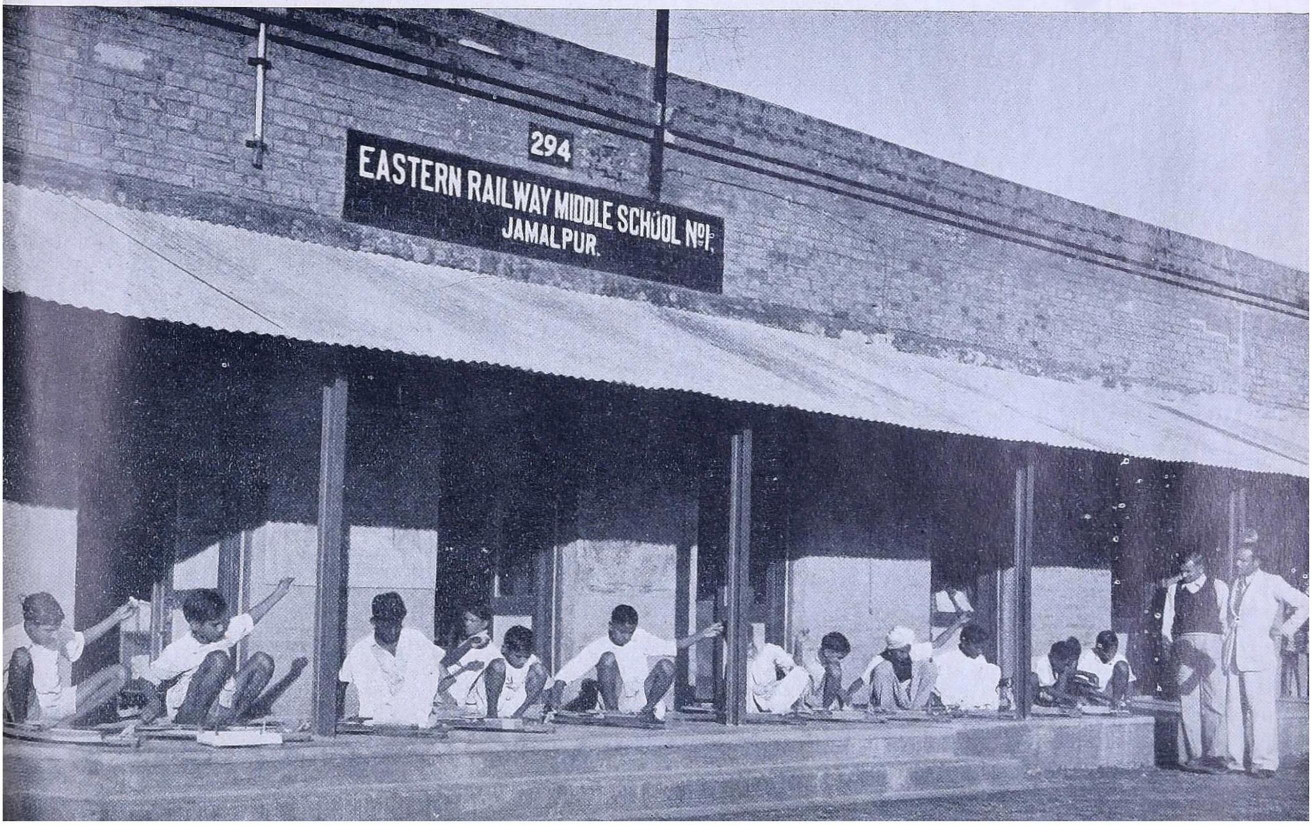
During the year under review five courses for probationary officers and two refresher courses for junior officers were held. There were also three special courses of lectures for senior officers—one by Shri B. B. Mathur, Chief Operating Superintendent, Northern Railway on "operational practice in foreign countries" and two for civil engineers on "surveys and constructions" and "prestressed concrete and soil mechanics" by Shri H. H. Waynforth, Engineer-in-Chief (Construction), Eastern Railway and Shri U. G. K. Rao, Dy. Director, Research, Lonavla.

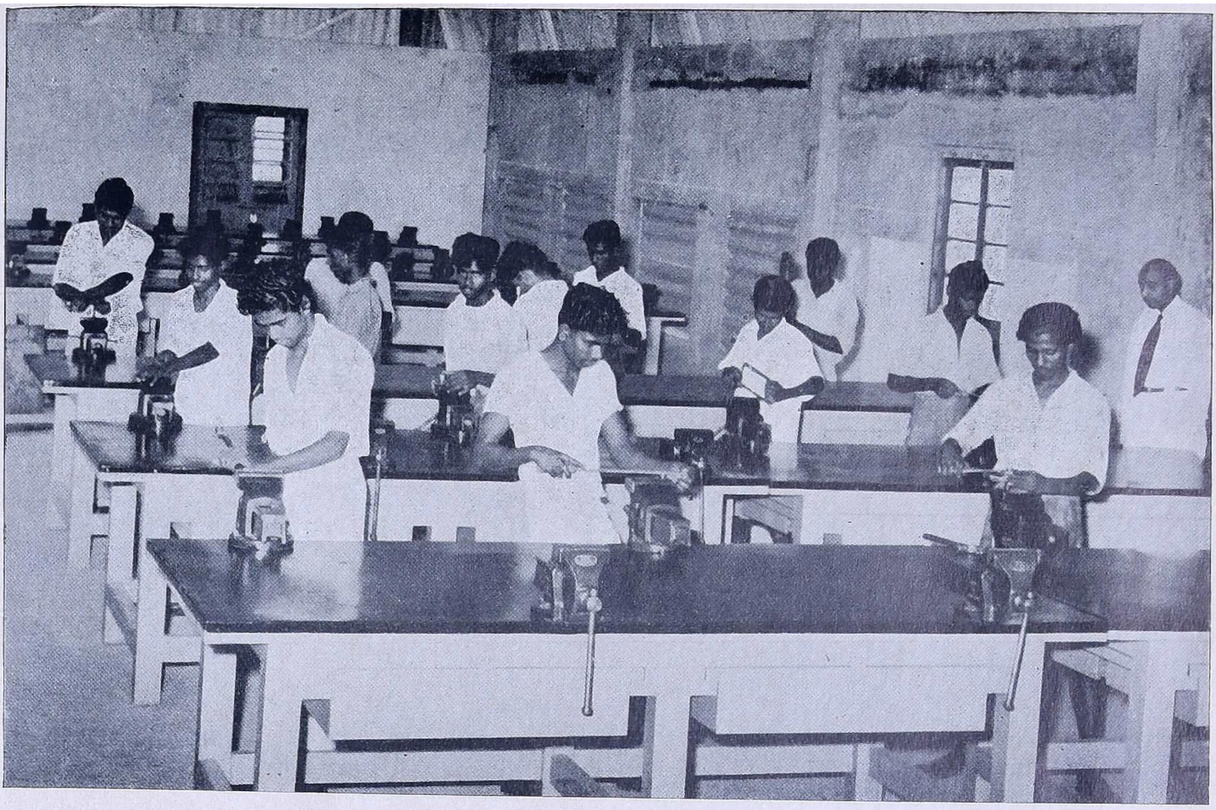
The college has a good reference library well stocked with all the latest books and technical magazines on every branch of railway activity and kept



Above: TRAFFIC TRAINING SCHOOL, GORAKHPUR, NORTH EASTERN RAILWAY

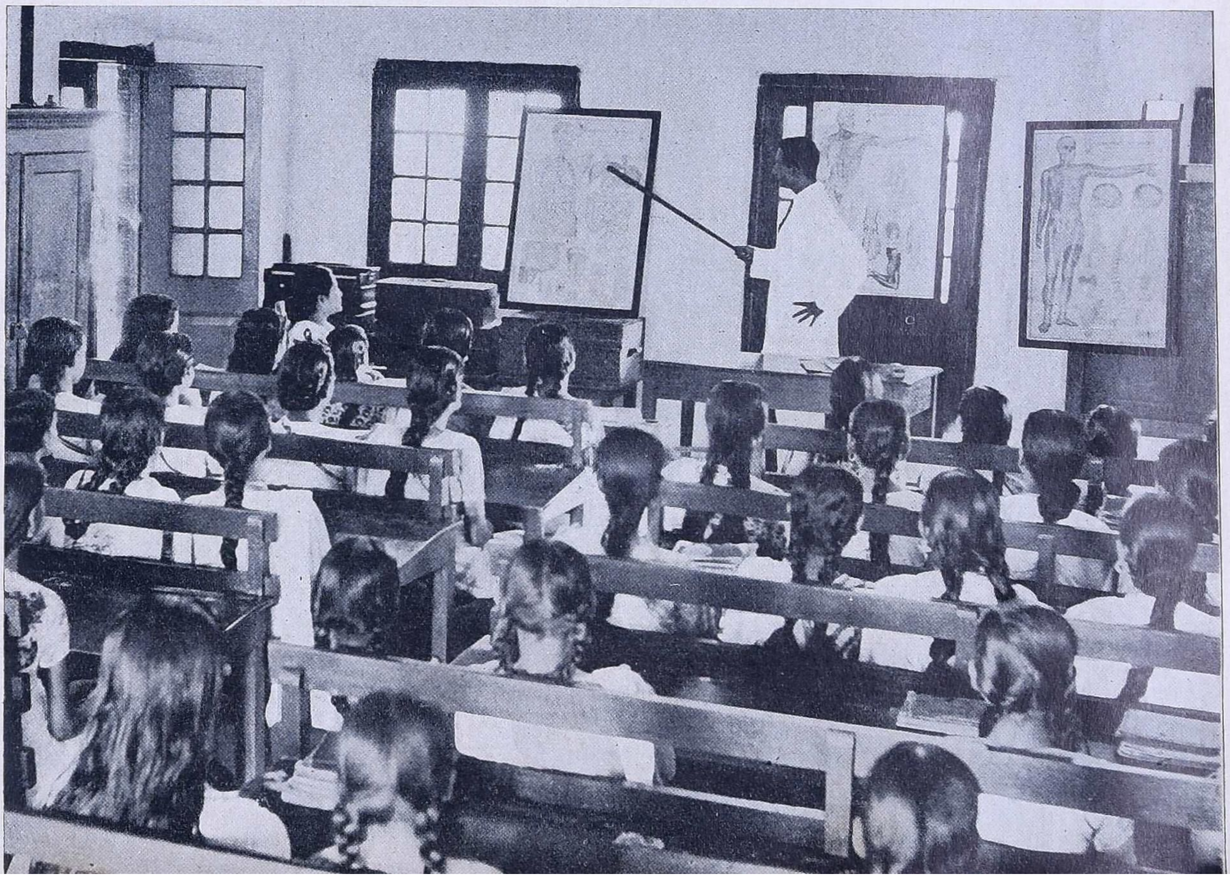
Below: SPINNING CLASS IN PROGRESS AT JAMALPUR RAILWAY SCHOOL—EASTERN RAILWAY





Above: TRAINEES AT WORK IN THE BASIC TRAINING SCHOOL OF THE INTEGRAL COACH FACTORY, PERAMBUR

Below: FIRST AID CLASS IN PROGRESS—EASTERN RAILWAY



upto date by constant additions. The library had nearly 2,200 volumes at the end of the year, over 1,300 being additions made during the year.

The college has a transportation model room and model railway with the necessary signalling and interlocking and block instruments. Being, however, too small and inadequately equipped for the type of training required to be given to trainee officers, it is being replaced by a new model room, construction of which has now been nearly completed. The equipment, which is still awaited, will comprise about 18 stations on a model railway with the latest equipment by way of signalling and interlocking, including features like centralized traffic control which have been incorporated for demonstration purposes. The ground floor of this building is proposed to be utilized as a museum to house exhibits like various types of railway equipment and other models of educational value.

Other aids to instruction include a life size demonstration railway yard, fully signalled and interlocked, comprising two lines with permanent way so laid as to show different types of permanent way structure and fittings in general use, besides a mechanical model room comprising three sheds housing a passenger locomotive in section, a number of models of mechanical and locomotive parts, a bogie underframe equipped with vacuum brake and a super-heated locomotive boiler for practical demonstration to trainees.

Audio-visual aids are also used for instruction and the college has its own 16 mm. sound projector and epidiascope. A film library with instructional film on railway matters is also being built up. Instruction to trainees includes, besides the usual lectures and the practical lessons given in the model rooms, periodical excursions to places of interest from a point of view of railway working.

The college has at present hostel accommodation adequate for 18 students and a scheme for providing additional accommodation for 12 students has been sanctioned. A scheme for improvement of the water supply is awaiting completion. Adequate recreational and sports facilities have been provided and proper arrangements for the maintenance of the colony and grounds and for sanitation and health have been made.

147. Training schools on railways.—There are at present 32 training schools functioning on Railways. Most of these are traffic training schools where recruits are trained in the duties of station masters, signallers, guards, booking and parcel clerks, etc. Refresher and promotion courses for staff already in service are also provided in a large number of these schools. Some railway workshops have technical schools attached to them to train apprentices who are intended for eventual appointment as skilled artisans and supervisors in workshops and sheds. Both Chittaranjan Locomotive Works and the Integral Coach Factory have technical schools attached to them. In some schools, loco running staff and permanent way staff are also trained. In the technical school at Jamalpur, special class apprentices recruited through the Union Public Service Commission for eventual appointment as Class I officers in the mechanical engineering and transportation (power) department are also given training.

On account of the importance of having well trained staff in the mechanical and electrical engineering departments and the variations which existed in the arrangements therefor on the several railways, the Board decided to review these existing facilities with a view to improving them. They accordingly appointed a committee of railway officers:

(*a*) to examine and find out the existing requirements of the Railways,

(*b*) to collect information regarding existing facilities for theoretical and practical training of apprentice mechanics and trade apprentices on the Railways,

(*c*) to find out to what extent facilities for theoretical training are available in the technical institutes run by the various State Governments, and how far they can be utilized on the Railways, and

(*d*) to make recommendations regarding improvements which should be effected in existing arrangements to impart both theoretical and practical training on a sounder footing.

The report of the committee was awaited at the close of the year.

CHAPTER X

AMENITIES FOR PASSENGERS

148. General.—Provision of amenities towards making rail travel more comfortable and safe continued to receive the close attention of Railway Administrations. Works undertaken with this object are particularly watched and progressed with care and adequate financial provision for these is made each year. They comprise provision of model carriages, fans and fittings, improvement of train lighting, opening of new stations and halts, provision of waiting rooms and halls, opening of new booking offices and out-agencies, electrification of stations, raising of platforms, catering arrangements and more improved sanitation of station premises and passenger carriages. During the year, 8,014 fans were fitted in Third class and 1,162 in Inter class coaches. Some of the important improvements on individual railways are enumerated below.

149. Improved lower class coaches.—Improved lower class coaches were put into service during the year to the number of 177 broad gauge, 264 metre gauge and 28 narrow gauge, as shown in the table below:

	Broad	Metre	Narrow
Indigenous (All-steel)—			
Hindustan Aircraft Limited	134	—	—
Braithwaite and Company	1	—	—
Railway workshops—			
Wooden coaches built to improved design	28	49	28
Furnished in Railway workshops	14	8	—
Foreign—			
Ex Germany	—	207	—
	177	264	28

150. Improvements to coaching stock.—The number of fans fitted in Inter and Third class coaches during 1953-4 totalled 9,176 and were distributed as follows:

Inter class	1,162
Third class	8,014

These fans were fitted to the following number of coaches.

Inter class	135
Third class	708

In addition, all new Third class coaches are being built to the improved amenity standard with wider seats, better lighting and improved lavatory arrangements.

151. Booking offices and out-agencies.—Additional booking facilities for the greater convenience of the travelling public were provided at different stations as indicated below.

Central Railway.—The following city booking agencies were opened by the Northern Railway and this Railway agreed to join them so far as booking on behalf of this Railway is concerned.

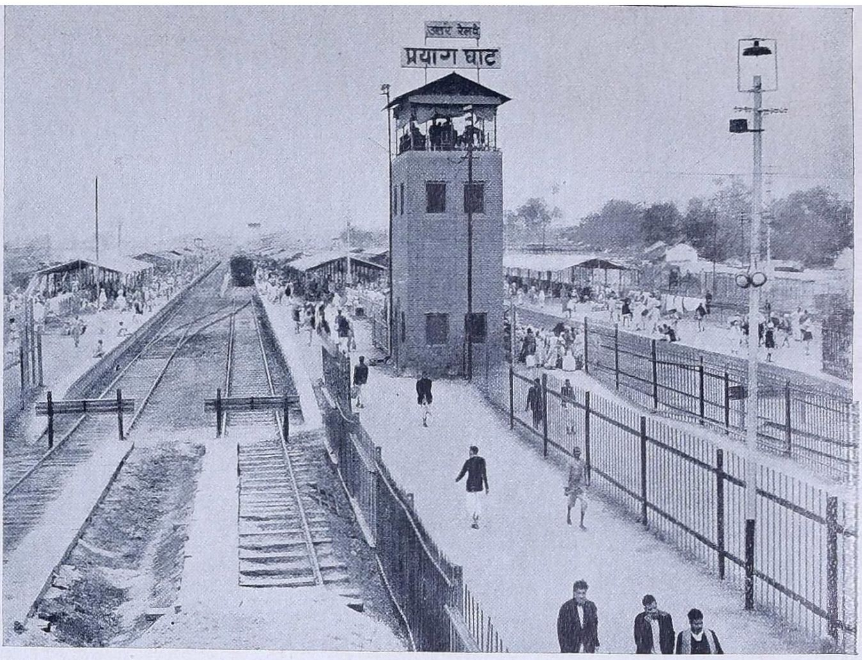
(i) Kanpur Moolganj.—Opened from 15 December 1953 for all classes of passengers (outward only) both in local and through booking.

(ii) Delhi Subzimandi *via* Delhi Junction.—Opened from 1 December 1953 for all classes of passengers and their luggage (outward), parcels and goods in smalls (both outward and inward) in local and through booking. This booking agency is also served by the New Delhi station for fresh fruits and perishable parcels (outward) for Central Railway stations.

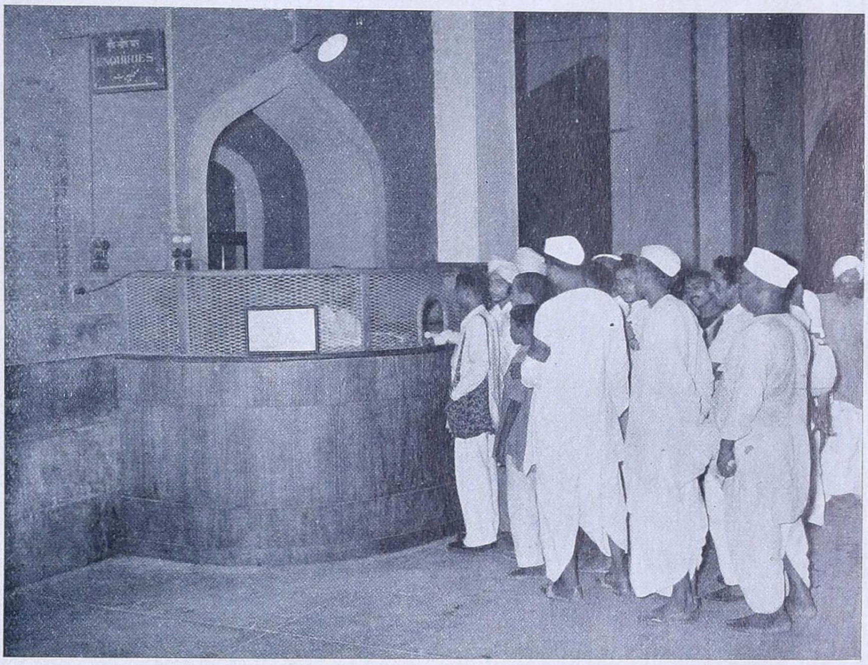
(iii) Delhi Karol Bagh.—Opened from 24 August 1953 for all classes of passengers in local and through booking.

(iv) Raja-ki-Mandi.—Owing to increase in passenger traffic at Raja-ki-Mandi station, the existing facilities were found to be inadequate, and as such an extra booking office has been opened on the Up platform with effect from 11 March 1954. The Enquiry Office at Agra Cantt. was previously manned by two enquiry clerks, each rostered for an 8 hour shift, between 6 and 22 hours and by the Assistant Station Master from 22 to 6 hours.

Right: A VIEW OF THE PRAYAG GHAT STATION CONSTRUCTED DURING THE KUMBH *MELA* FOR HANDLING ADDITIONAL PILGRIM TRAFFIC



Right: THE RECENTLY CONSTRUCTED THIRD CLASS ENQUIRY OFFICE AT LUCKNOW JUNCTION



Left: NEW RETIRING ROOMS AT GOOTY

As there were complaints that calls were not attended to when the Assistant Station Master happened to be attending the trains, a third enquiry clerk was sanctioned and Enquiry Office is now manned during all the 24 hours by enquiry clerks with effect from 30 January 1954.

Northern Railway.—City booking offices were opened at Kanpur Mall Road, Aligarh, Delhi Karol Bagh, Delhi Subzimandi, Kanpur Moolganj, Bareilly, Muzaffarnagar, Hardwar, and Moradabad and out-agency at Tahsil Padampur Sri Ganganagar during the year.

North Eastern Railway.—Nine additional booking windows for Third class and two for Upper class passengers were opened. A city booking agency for sale of Inter and Third class tickets for local passengers was opened with effect from 16 June 1953 at Allahabad Chowk, in coordination with Northern Railway. The booking offices remain open all the 24 hours for business at 24 stations.

Southern Railway.—During the year, three new out-agencies at Puttur, Karkal and Laxmeshwar and nine halts were opened. Aruppukottai out-agency which was previously dealing with parcels and goods traffic only, has been opened for passenger traffic and their luggage also with effect from 1 February 1954.

Western Railway.—Extension of the overhead booking office at Elphinstone Road and the work of improvements to booking office at Ratlam and Miyagam was completed. A booking office was provided at Gir-Gadhra. The work of providing extra booking facilities at Botad and Dhandhuka was completed. A separate luggage office was under construction at Junagadh.

152. Waiting rooms and waiting halls.—Besides improvements being made to the existing station accommodation new waiting rooms and waiting halls were constructed at a number of stations during the year.

Central Railway.—Third class waiting halls have been provided at Bina and Bhilsa. The work of providing an Upper class waiting rooms at Mathura and a Third class waiting hall at Harpalpur, Lasalgaon, Satna and Puntamba is in progress.

Eastern Railway.—During the year, Upper class waiting rooms were provided at Titilagarh and Parvatipuram for lady passengers and at Mugma, Garh Dhenkanal, and Tumsar Road for gentlemen. Provision of Third class waiting halls was also provided at Bhadama, Berhampur Court, Raipur and Brojarajnagar.

North Eastern Railway.—Additional waiting rooms were constructed at Forbesganj, Pilibhit, Bazpur and Basti, and waiting halls at 18 stations. Improved latrines and sanitary arrangements were installed at ten stations during the year.

Southern Railway.—Two new retiring rooms fully furnished with modern furniture have been provided at Gooty station, soon after the formation of the Andhra State. The bath rooms attached to retiring rooms Nos. 8 and 9 at Trichinopoly Junction have been extended to twice their old size to suit the convenience of tourists. At Guntakal, improvements to the retiring rooms such as increased accommodation and provision of flushout latrines and standard type furniture are being arranged. New Third class waiting halls have been provided at Majorda, Jumnal, Nandre and Alandi and a waiting hall at Mailam. Third class waiting halls have been constructed at Padugupadu, Sivaraopeta and Kistna Canal and a large festival waiting hall at Jagannath Temple Gate. A waiting room for the use of Third class lady passengers has been provided at Cuddalore Junction and a separate waiting hall at Adirampatnam.

Western Railway.—New waiting halls for Third class passengers are under construction at Paldhi, Amalner, Siddhpur, Deesa, Narnaul, Falna, Rani, Bijainagar, Omkareshwar Road and Ghosrana. A new waiting hall at Karanpura was sanctioned and completed. The existing ones are being extended at Gangapur, Sawai Madhopur and Harsauli. Works of improvement and extension to waiting halls were carried out at Bandikui, Talod, Chitorgarh, Hatundi, Fatehnagar, Nathdwara, Kapasin, Gandhigram, Botad, Khodiyar Mandir, Chhota Udaipur, Jambusar and Ajmer. At Ratlam a new

Inter class waiting room is being provided. Upper class waiting rooms and halls were provided at Ratlam, Ujjain, Phulera, Ajmer and Pipli. The work of providing Upper class waiting rooms and halls was in progress at Dakor, Indore, Abu Road, Talod, Mehsana, Palanpur, Siddhpur, Deesa, Unjha, Dabhoi and Mangela.

153. **Additional platforms and sheds, etc.**—During the year under review considerable improvements were made in regard to provision of additional platforms, extension and improvement of existing platforms in respect of their length, surfacing, etc. To provide shelter from sun and rain, additional sheds and covering were provided on a large number of platforms. Besides, additional facilities, such as, flush lavatories, bathing places, water taps, benches on platforms and in waiting halls, were also provided for the benefit of the travelling public. The main improvements carried out on the different railways are summarized below:

Central Railway.—(i) Surfacing of platforms with concrete, stone paving, etc., was carried out at Bhilsa, Mathura and 32 other stations.

(ii) Raising or lengthening of passenger platforms was carried out at Gangakhed, Umdi and five other stations.

(iii) Water huts were provided at 19 stations.

(iv) Additional benches were provided at 27 stations.

(v) Shed coverings were provided to the foot over-bridge and ramp at Mathura and covered surfacing over platforms at Ganjbasoda and Parbhani.

(vi) Latrines and urinals were provided at Gwalior, Itarsi and six other stations.

(vii) Lamp posts and lighting facilities were provided at 30 stations and additional water taps at seven stations.

(viii) Besides, the above, improvements have been carried out regarding provision of drainage arrangements and water supply, bathing facilities, fencing, etc., on a number of other stations.

Eastern Railway.—(i) A new station building has been provided at Kalyani and the station building at Bahrampur Road and Srikakulam Road remodelled.

(ii) Platform surfacing has been improved on a dozen stations by providing cement concrete, soil cement and other types of surfaces.

(iii) An additional platform has been provided at Howrah and an island platform at Magra Hat.

(iv) Platforms at 14 stations were raised and at 16 stations extended.

(v) Platform shelters were provided at 12 stations including Khurda Road, Dakhineswar and Jasidih.

(vi) Improvements were made to the drinking water supply and water shelters and additional taps provided at a large number of stations.

(vii) Additional flush type latrines, urinals, etc., were provided at about 20 stations.

Northern Railway.—(i) Covered platforms were provided at Allahabad and seven other stations, the total length of covering being 2,442 feet.

(ii) Covered platforms were extended at 14 other stations for a total length of 1,175 feet.

(iii) Cement concrete surfacing of platforms at Allahabad, Lucknow, Bareilly and eight other stations was carried out.

(iv) Extension of platforms was carried out at seven stations.

(v) Raising of platforms was done at eleven stations.

(vi) A tourist platform was provided on the civil lines side of the Allahabad station.

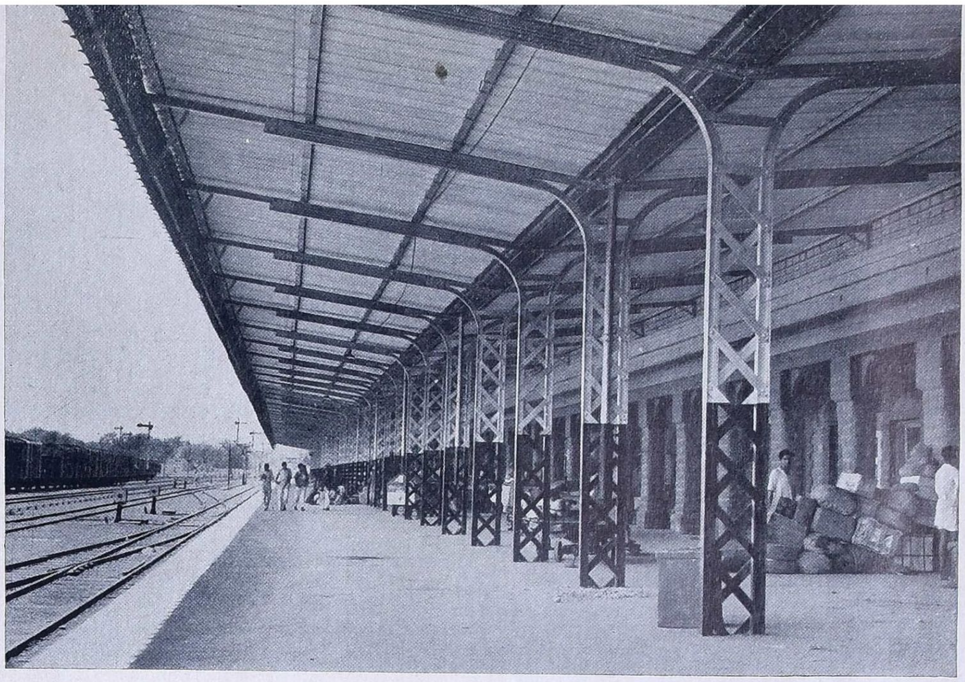
(vii) Improvements in drinking water supply were made by providing filtration and chlorination plants at two of the stations.

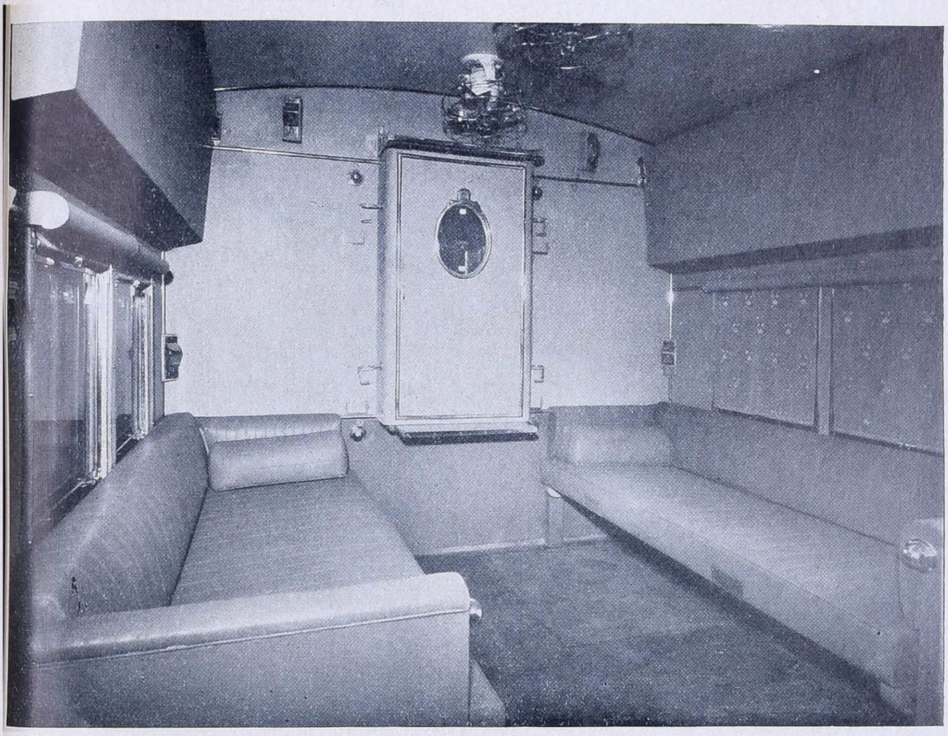
(viii) A foot overbridge was provided at Ayodhya besides strengthening the steel work and renewing the floor of the foot overbridges at two other stations.

(ix) Besides the above, additional bathing facilities were provided at five stations.

North-Eastern Railway.—(i) Large number of platforms were extended, widened and their surfacing improved in addition to providing a covering on a number of them.

ight: A VIEW OF THE NEW PLATFORM COVERAGE ON REWARI STATION ON BIKANER DIVISION OF NORTHERN RAILWAY





Left: INTERIOR VIEW OF THE METRE GAUGE AIR-CONDITIONED COACH RECENTLY CONSTRUCTED IN RAILWAY WORKSHOPS AT AJMER

ight: PASSENGERS BOARDING FERRY STEAMERS AT MOKAMEH GHAT

(ii) Provision was also made for bathing facilities at stations and improvements carried out in the circulating areas of stations and platforms, lavatories, etc.

Southern Railway.—(i) Platform shelters were provided at about 60 stations.

(ii) Improvements to platforms in the shape of raising, lengthening, paving and concreting were carried out at about 30 stations.

(iii) Platform benches were provided at 38 stations.

(iv) Foot overbridges on four stations were completed while on 12 others it was in progress.

(v) Improvements to latrines on platforms were carried out at a large number of stations.

Western Railway.—(i)The work of providing platform shelters was completed at Santa Cruz and Indore, while it was in progress at seven other stations.

(ii) The extension of passenger platforms was completed at Bombay Central, Sawai Madhopur and six more stations, while it was in progress at 14 other stations.

(iii) Raising and extending of platforms at Jaipur, Surendranagar Junction and 30 other stations has been completed.

(iv) The work of providing rail level platforms was in progress at eight stations.

(v) Water huts were provided at 44 stations, besides improvements in the water huts at about 30 stations.

(vi) Asphalting and concreting of platform surfacing was completed at half a dozen stations besides which approach roads and circulating areas were improved on a number of stations.

(vii) R. C. C. and other types of benches were provided at a large number of stations.

154. Electrification of stations.—The work on the provision of electric lighting of passenger platforms, station buildings, waiting shed, approach roads, circulating areas, recorded satisfactory progress during the year. In all 131 stations were electrified during the year on Indian Government Railways as detailed below:

Railway	No. of stations
Central	9
Eastern	29
Northern	14
North Eastern	13
Southern	51
Western	15
Total	131

Further electrification of 33 stations on the Northern, North Eastern and Western Railways are in progress.

Water coolers have been installed at 43 stations of the Northern, North Eastern and Western Railways. Besides these arrangements for supply of refrigerated drinking water to passengers have also been made on 23 stations of the Northern Railway.

155. Catering arrangements.—Sustained attention was paid to improve both the general standard of service and the quality of foodstuffs offered for sale.

Following the discussions at the first meeting of the National Railway Users' Consultative Council held on the 27/28 October 1953, on the subject of the policy to be followed in respect of catering and vending, a special committee (consisting of the Deputy Minister for Railways as Chairman, and the Parliamentary Secretary to the Minister, the Financial Commissioner for Railways, and the Member, Transportation, Railway Board, as Members), was appointed to go into all the aspects of the problem, having regard to the discussions in the Council, and to devise appropriate measures for an all-round improvement in the catering arrangements and services on the Railways.

This Committee had five sittings during the year under review but had not concluded their deliberations.

156. Supply of drinking water.—The question of making adequate arrangements to ensure proper supply of drinking water to passengers at stations and on trains was treated as one of prime importance.

Apart from the usual number of watermen at the smaller stations, the arrangements for posting 20 watermen at certain selected larger stations on important routes, to serve water to passengers in trains, were continued.

The scheme for supplying water to passengers in trains utilizing watermen and a separate compartment for the storage of water on Lumding-Badarpur, Tinsukia-Furkating, Rangiya-Rangapara North, Banaras Cantt-Chupra and Kanpur-Anwarganj-Kasganj sections of the North Eastern Railway was well appreciated so that the scheme was noted for extension to other sections during the next hot weather.

Similar arrangements were also in force on certain sections of the Northern Railway.

The number of stations where the facility of electrically cooled drinking water was provided rose from 83 to 115 during the year under review.

157. Steps to alleviate overcrowding in trains.—Census of passengers travelling by various trains and over various sections continued to be taken from time to time, and wherever the results indicated overcrowding, train services were strengthened to the extent possible with the available resources. The train services were also augmented by introduction of additional trains and thus the total passenger train mileage run on Indian Railways during the year 1953-4 was 111 million, as against 107 million during the previous year, 1952-3.

158. Actual expenditure under the detailed heads on passenger amenities.—The statement below gives the actual expenditure during 1953-4 on passenger amenity works.

STATEMENT OF EXPENDITURE ON PASSENGER AMENITIES FROM DEVELOPMENT FUND FOR THE YEAR 1953-4

(In thousands of rupees)

	Central	Eastern	Northern	North-Eastern	Southern	Western	Total
Water supply at stations	6,13	4,68	3,69	2,59	66	1,13	18,88
Waiting rooms and festival sheds.	69	7,97	2,69	2,51	1,83	5,66	21,35
Refreshment rooms, retiring rooms and vendor's stall of all description.	3,48	54	1,40	1,00	1,94	33	8,69
Provision and improvement of latrines.	59	68	56	53	75	1,02	4,13
Extending, raising, widening, surfacing, covering and other improvements including provision of seats plantation, etc. at platforms.	8,83	15,45	17,37	8,98	5,57	15,07	71,27
Provision of new overbridges and sub-ways and extension.	82	83	2,93	34	1,65	87	7,44
Provision of bathing facilities at stations.	16	3	11	76	2	11	1,19
Improved station approaches including improved lighting.	1,26	53	1,09	99	2,06	1,64	7,57
Improvement to existing carriages such as fans.	86	17,94	1,43	4,21	17,05	8,01	49,50
Improved lighting and provision of fans for station platforms, waiting halls, festival sheds and vendor's stalls.	2,39	3,21	2,56	23	3,80	1,07	13,26
Works coming under all these heads provided in connection with *melas*.	6	6	8	16	—	—2	34
Any other works considered essential.	4,12	2,47	4,65	13,82	14,00	4,19	43,25
TOTAL	29,39	54,39	38,56	36,12	49,33	39,08	2,46,87

CHAPTER XI

ACCIDENTS

159. Railway Accident Enquiry Committee.—There were some railway accidents towards the end of December 1953 and early in January 1954 which attracted considerable public attention. The Government then decided to set up a committee to study and analyse the causes of accidents on Indian Railways so that due attention is focussed on all factors contributing to their occurrence and remedial action is promptly taken. The committee consisting of the following was accordingly constituted during the latter half of January 1954:—

(1) Shri Shah Nawaz Khan, Parliamentary Secretary to the Minister for Railways and Transport	*Chairman*
(2) Shri P. N. Mubayi, Chief Government Inspector of Railways	*Member*
(3) Shri N. S. Sen, retired General Manager of the *ex*-B.B. and C. I. Railway	*Member*

The terms of reference of the Committee were as follows:—

(1) to study the reports of the enquiries into all train accidents on all Indian Railways which have taken place since 1 January 1953 and to analyse their causes;

(2) to examine how the recommendations made by the investigating officers have been dealt with and those accepted by the Railway Board or Railway administrations have been implemented; and

(3) to make recommendations with a view to reducing the incidence of such accidents.

The Committee started working immediately and was expected to submit its report to the Minister by the end of April 1954.

160. Major accidents.—The details of major accidents which occurred during the year are given below:—

On 25 April 1953, while No. 374 Down passenger train was running between Sarnath and Kadipur stations on the Aunrihar-Banaras Section of the North Eastern Railway, five coaches commencing from the second from the engine, on the train derailed and capsized. Four persons were killed and nine injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 8,500. The derailment was caused by the failure on the part of the gangmen, carrying on the work of oiling and cleaning rail joints, to take necessary precautions for the safety of approaching trains.

On 29 April 1953, while No. 307 Down Nainital Express was running between Baheri and Kichha stations on the Bhojeepura-Kathgodam section of the North Eastern Railway, the engine and four bogie coaches next to it derailed and capsized. Three persons were killed and eleven injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 30,000. The derailment was caused by the track having been tampered with by some person or persons unknown.

On 13 June 1953, while No. 3303 Up goods train was running from Battulapuram to Mulacalacheruvu stations on the Dharmavaram-Pakala metre gauge section of the Southern Railway, No. 1144 Down Mixed train also entered the same block section from Mulacalacheruvu, *i.e.*, from the opposite direction and collided head-on with the goods train in mid-block section. 68 persons were killed and 69 injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 216,428. The collision was caused as a result of the assistant station master Mulacalacheruvu, having wrongly despatched the mixed train into the block section.

On 16 June 1953, while No. 807 Up goods was running from Katihar to Semapur station on the Katihar-Barauni Junction section of the North

Eastern Railway, No. 442 Parcel-Passenger (mixed) train also entered the same block section from Semapur, *i.e.*, from the opposite direction, and collided head-on with the goods train. Six persons were killed and 49 injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 1,44,000. The accident was caused by the driver of the mixed train entering the block section without authority.

On 2 January 1954, No. 899 Up goods while performing shunting at Raxaul station, the driver of the train wrongly proceeded about half a mile into the Raxaul Bhelwa block section on the Raxaul-Narkatiaganj section of the North Eastern Railway and collided head-on with No. 338 Down passenger which was approaching Raxaul from Bhelwa. Ten persons were killed and five injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 54,800. The collision was caused by the goods train entering the block section without authority.

On 4 January 1954, while No. 4 Up passenger train was running between Bhatinda and Phus Mandi stations on the Bhatinda-Ambala Cantonment section of the Northern Railway, the engine and three leading bogie coaches capsized after passing over a bridge at Mile 203/16-17. Five coaches behind it derailed and were damaged. The casualties were 17 persons killed and 41 injured. The approximate cost of damage to railway property was Rs. 1,44,100. The accident was caused due to the erosion of the railway bank by flood water rushing out from a breach in the embankment of an adjacent canal distributory. Eight hours before the mishap another train passed over the bridge safely and did not feel anything unusual. Owing to foggy weather, the visibility was impaired and the breach that had taken place within a few hours could not be noticed by the driver well in advance to stop the train to avert the accident.

On 8 February 1954, while a construction material train was running between Saktesgarh and Lusa stations on the Chunar-Robertsganj (Construction) line of the Northern Railway, 14 loaded wagons parted from the rest of the train and rolled backwards on a continuous decending gradient and crashed on a girder bridge, where a pair of rails had been removed for renewing some bridge sleepers. Twelve of the wagons plunged into the gorge below causing death and injuries to the workmen engaged in the construction work. 33 persons were killed and 8 injured. The approximate cost of damage to engine, rolling-stock and permanent way was Rs. 59,600. The accident was caused by the failure of the drawbar of a wagon.

On 31 March 1954, while 313 Katihar-Kanpur passenger train was about to leave Jagatbela station on the Gorakhpur-Lucknow Main Line Section of the North Eastern Railway, a sudden explosion took place in a third class coach fourth from the engine on the train. The coach was completely smashed and the coaches on either side of this coach also suffered damages. 31 persons were killed and 38 injured. The approximate cost of damage to rolling-stock and station equipment and building was Rs. 64,300. The accident was caused by the detonation of explosives carried by district police constables in a compartment of the train, in contravention of the regulations prescribed for the carriage of explosives by passenger trains.

161. Review of accident statistics.—The following statement analyses, under certain principal heads the accidents which occurred during the last two years. A statement showing the character and extent of accidents in greater detail for each railway will be found in Appendix D of Volume II of this report.

There has been a reassuring decline in the number of accidents on open line of Indian Railways during the year 1953-4 as compared with the previous year, *viz.*, from 13,146 to 11,450 or a decrease of 13 per cent. The increase in the total train miles was, however, of the order of 2 per cent. Thus despite an increase in train mileage the incidence of accidents has been lower.

ACCIDENTS DURING 1952-3 AND 1953-4 CLASSIFIED UNDER PRINCIPAL HEADS

	1952-3	1953-4
(1) Running over cattle	4,150	**3,722**
(2) Accidents due to failure of engines, owing to faulty material, workmanship and operation arising from the working of the running staff	1,907	**2,248**
(3) Accidents due to failure of coupling and draft gear	1,832	**1,715**
(4) Accidents due to failure of engines owing to faulty design, material and workmanship in the mechancial department	1,544	**1,093**
(5) Derailments not involving passenger trains	1,223	**1,075**
(6) Accidents due to other rolling-stock failures	695	**205**
(7) Fires in trains, at stations & bridges	334	**256**
(8) Derailment of passenger train	226	**235**
(9) Flooding of permanent way	125	**61**
(10) Trains running into road traffic at level crossings	110	**104**
(11) Attempted train wrecking	104	**91**
(12) Running over obstructions (other than those included under 'train wrecking' 'attempted train wrecking' and 'trains running into road traffic at level crossings')	104	**128**
(13) Collisions involving goods trains or goods vehicles	73	**63**
(14) Broken rails	71	**45**
(15) Accidents due to failure of axles	66	**30**
(16) Collisions involving passenger trains	36	**25**
(17) Passenger trains running in the wrong direction through points but not derailed	18	**24**
(18) Landslips	14	**12**
(19) Collisions between light engines	9	**5**
(20) Accidents due to failure of brake apparatus	6	**3**
(21) Train wrecking	5	**4**
(22) Failure of bridges, tunnels, etc	3	**4**
(23) Accidents due to failure of tyres and wheels	—	**7**
(24) Miscellaneous	491	**295**
TOTAL	13,146	**11,450**

Running over cattle still accounts for the largest number of accidents. The percentages of the accidents by categories to total are given below in the descending order of their number:—

	Per cent.
Running over cattle	33
Accidents due to failure of engines owing to faulty material, workmanship and operation arising from the working of the running staff	20
Accidents due to failure of couplings and draft gear	15
Accidents due to failure of engines owing to faulty design, material and workmanship in the mechanical department	10
Derailments not involving passenger trains	9
Accidents due to other rolling-stock failures	2
Fires in trains at stations and bridges	2
Derailments of passenger trains	2

Accidents in railway workshops accounted for the death of six and injuries to 19,113 railway servants or decrease of 2 in former and 1,344 in the latter as compared with the previous year.

The number of passengers, railway servants and other persons killed and injured in accidents on Indian Railways exclusive of casualties in railway workshops during 1953-4 as compared with the previous year may be seen from the table below:—

NUMBER OF PERSONS INJURED IN ACCIDENTS ON ALL RAILWAYS DURING 1952-3 AND 1953-4:—

Classification	Killed 1952-3	Killed 1953-4	Injured 1952-3	Injured 1953-4
A.—Passengers—				
(a) In accidents to trains, rolling-stock, permanent way, etc.	57	**128**	361	**381**
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	319	**316**	2,999	**3,073**
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	2	**1**	100	**96**
TOTAL	378	**445**	3,460	**3,550**
B.—Railway servants—				
(a) In accidents to trains, rolling-stock, permanent way, etc.	16	**66**	165	**176**
(b) In accidents caused by the movement of trains and railway vehicles exclusive of train accidents	186	**165**	5,679	**5,798**
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned	24	**47**	18,343	**16,334**
TOTAL	226	**278**	24,187	**22,308**
C.—Other than passengers and railway servants—				
(a) In accidents caused to trains, rolling-stock, permanent way, etc.	18	**15**	89	**64**
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents	4,092	**3,935**	1,997	**1,990**
(c) In accidents on railway premises in which movement of trains, vehicles, etc., was not concerned	43	**12**	56	**71**
TOTAL	4,153	**3,962**	2,142	**2,125**
GRAND TOTAL	4,757	**4,685**	29,789	**27,983**

Of the total of 4,685 persons killed, 3,962 or 85 per cent were other than passengers and railway servants and of this number, 3,349 were trespassers and 381 were suicides. Altogether 60 persons were killed on railway premises otherwise than during the movement of trains, vehicles, etc.

As compared with the previous year the number of passengers and railway servants killed and injured in accidents to trains, rolling-stock and permanent way etc., increased by 121 and 31 respectively, owing to heavy casualties in the eight major accidents described in the preceding paragraph of this report.

The position, as compared with the previous year, in the casualty figures under certain other items and the reasons therefor are indicated below:—

(i) The number of Railway servants injured in accidents caused by the movement of trains and railway vehicles, exclusive of train accidents, increased by 119 due mainly to an increase in the number while attending to or by the failure of machinery, etc.. of engines in steam.

(ii) The number of railway servants killed in accidents on railway premises, not connected with the movement of trains and railway vehicles, etc., increased by 23 due mainly to increases in the number while working on the line in sidings, attending to stationary engines at sheds.

(iii) The number of persons other than passengers and railway servants injured in accidents on railway premises in which movement of trains, vehicles, etc., was not concerned increased by 14 due to increases in the number while loading or unloading or sheeting of wagons and other miscellaneous causes.

The following statement shows the number of passengers killed and injured in train accidents only, *i.e.*, collisions, derailments, etc., during the last five years as compared with the number carried.

NUMBER OF PASSENGERS KILLED AND INJURED IN TRAIN ACCIDENTS ON ALL RAILWAYS FROM 1949-50 TO 1953-4

Year	No. of passengers carried (in millions)	Killed		Injured	
		Number†	Per million passengers carried	Number†	Per million passengers carried
1949-50	1,255	111	0·09	365	0·29
1950-1	1,308	21	0·02	284	0·22
1951-2	1,232	38	0·03	290	0·24
1952-3	1,212*	54	0·04*	339	0·28*
1953-4	**1,220**	**128**	**0·10**	**381**	**0·31**

* Revised figures.
† Excludes train wrecking and attempted train wrecking.

On the Government Railways, the main causes for the accidents to railway servants caused by the movement of trains and railway vehicles exclusive of train accidents, are analysed in the following table:—

CLASSIFICATION OF ACCIDENTS TO RAILWAY SERVANTS ON GOVERNMENT RAILWAYS

Cause	Killed		Injured	
	1952-3	**1953-4**	1952-3	**1953-4**
(1) Misadventure or accidental	165	**146**	5,281	**5,352**
(2) Want of caution or misconduct on the part of the injured person	20	**16**	339	**408**
(3) Want of caution or breach of rules, etc., on the part of railway servants other than the persons injured	1	**1**	46	**19**
(4) Defective apparatus, appliances, etc., or want of sufficient appliances, safeguards, etc.	..	..	2	**2**
TOTAL	186	**163**	5,668	**5,781**

162. Appointment of Claims Commissioners.—During the year under review two Claims Commissioners were appointed in respect of the following major accidents:—

(i) Collision between Nos. 1144 mixed and 3303 goods trains on 13 June 1953 between Battulapuram and Mulacalacheruvu stations on the Southern Railway.

(ii) Derailment of 4 Up passenger train on 4 January 1954 between Bhatinda and Phus Mandi stations on the Northern Railway.

2. The Claims Commissioner, Chittoor, disposed of 97 claims decreeing Rs. 1,55,249-7-0. The Claims Commissioner, Bhatinda did not start functioning during the year under review. In addition, the other Claims Commissioners appointed during the previous years continued to dispose of pending cases.

APPENDIX A

Resolution regarding the separation of Railway from General Finances, adopted by the Legislative Assembly on 20 September 1924 and Convention Resolutions of 1943 and 1949.

" This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways,

(1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.

(2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

(3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve ; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

(4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues ; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital ; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced.

(5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.

(6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Committee for Railways shall be *ex-officio* members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight elected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.

The Railway Department shall place the estimate of railway expenditure before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demand for grants for railways and shall, as far as possible, instead of the expenditure programme revenue show the expenditure under a depreciation fund created as per the new rules for charge to capital and revenue.

(7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and the Member in charge of Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after separation, the detail it should give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with

the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

(8) These arrangements shall be subjected to periodic revision but shall be provisionally tried for at least three years.

(9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends—

(i) that the railway services should be rapidly Indianised, and further that Indians should be appointed as Members of the Railway Board as early as possible, and

(ii) that the purchases of stores for the State Railways should be undertaken through the organization of the Stores Purchase Department of the Government of India."

Convention Resolution of 1943

The Legislative Assembly on 2 March 1943 passed the following resolution:—

"Whereas it has been found that the Convention, which was adopted under the Assembly Resolution, dated 20 September 1924, and which was intended to relieve the General Budget from violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry on a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State, has not achieved these objects, this Assembly recommends to the Governor General in Council that:

(i) for the year 1942-3, a sum of Rs. 2,35,32 thousand shall be paid to general revenue over and above the current and arrear contribution due under the Convention,

(ii) from 1 April 1943, so much of the Convention as provides for the contribution and allocation of surpluses to general revenues shall cease to be in force,

(iii) for the year 1943-4, the surpluses on commercial lines shall be utilised to repay any outstanding loan from the depreciation fund and thereafter be divided 25 per cent to the railway reserve and 75 per cent to general revenues, the loss, if any, on strategic lines being recovered from General Revenues, and

(iv) for subsequent years and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines between the railway reserve and general revenues shall be decided each year on consideration of the needs of the railways and general revenues, the loss, if any, on strategic lines being recovered from general revenues."

Convention Resolution of 1949

The Constituent Assembly of India (Legislative) on 21 December 1949 passed the following resolution:—

"This Assembly, after considering the recommendations of the Committee appointed by it in April 1949 to review the Convention relating to the separation of railway from general finance which was adopted under the Assembly Resolution, dated 20 September 1924, and in supersession of that and all other previous resolutions on the subject, resolve:—

(1) that railway finance shall continue to remain separated from general finance;

(2) that the general tax-payer shall have the status of the sole shareholder in the railway undertaking;

(3) that on the capital invested out of general revenues in the railway undertaking as computed annually, general revenues shall receive only a fixed annual dividend;

(4) that for a period of five years, commencing from 1950-1, the annual dividend, shall be a sum calculated at the rate of 4 per cent on the capital invested provided that no dividend shall be payable on the capital invested out of general revenues in unremunerative strategic lines;

(5) that a Committee of the House shall review the rate of dividend towards the end of the aforesaid period and suggest for the years following it any adjustment considered necessary, having regard to the revenue returns of the railway undertaking, the average borrowing rate of government and any other relevant factors ;

(6) that the existing railway reserve shall be renamed the Revenue Reserve Fund and utilised primarily for maintainig the agreed payments to general revenues and for making up any deficit in the working of the railways ;

(7) that a Development Fund shall be constituted for financing expenditure for the following purposes:—
(*a*) passenger amenities,
(*b*) labour welfare, and
(*c*) railway projects which are necessary, but unremunerative ;

(8) that for meeting the cost of replacement and renewal of assets, the Depreciation Reserve Fund shall receive, for the next five years, a minimum contribution of Rs. 15 crores per annum chargeable to the working expenses of the undertaking ;

(9) that the railway surplus shall be available for distribution amongst the Revenue Reserve Fund, the Development Fund, and the Depreciation Reserve Fund to the extent the last-named needs strengthening over and above the minimum annual contribution ;

(10) that a Standing Finance Committee of Railways and a Central Advisory Council for Railways shall be constituted in the manner laid down in the motion adopted by this House on 23 March 1949 ;

(11) that the annual estimates of railway expenditure shall be placed before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demands for grants for railways by the Assembly ; and

(12) that the Railway Budget shall be presented to the House, if possible, in advance of the general budget and separate days shall be allotted for its discussion and the Minister for Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the Railway Budget, including the appropriation to the Depreciation Reserve Fund, the Development Fund, and the Revenue Reserve Fund shall be placed before the House in the form of demands for grants. The form the budget shall take, the details it shall give, and the number of grants into which the total vote shall be divided, shall be drawn up by the Ministry of Railways in consultation with the Standing Finance Committee for Railways.

2. This Resolution shall come into force from 1 April 1950."

APPENDIX B

MINISTRY OF RAILWAYS

Officers of the Ministry of Railways (Railway Board) and attached offices on 31 March 1954

Shri Lal Bahadur Shastri, Minister for Transport and Railways

Shri O. V. Alagesan, Deputy Minister for Transport and Railways

Railway Board

Shri F. C. Badhwar	Chairman and Member Engineering
„ P. C. Bhattacharyya	Financial Commissioner for Railways
„ V. Nilkantan	Member (Staff)
„ S. S. Vasist	Member (Transportation)
„ H. K. L. Sethi	Director, Civil Engineering
„ M. N. Chakravarti	Director, Efficiency Bureau
„ P. N. Saxena	Director, Establishment
„ D. P. Mathur	Director, Finance (Budget)
„ N. C. Deb	Director, Finance (Expenditure)
„ P. Morris	Director. Mechanical Engineering
„ B. C. Mallik	Director, Rail Movements (Calcutta)
„ S. L. Saksena	Director, Railway Equipment
„ A. K. Basu	Director, Traffic (General)
„ Ranjit Singh	Director, Traffic (Transportation)
„ L. A. Natesan	Economic Adviser
„ R. E. De Sa	Joint Director, Civil Engineering
„ V. T. Narayanan	Joint Director, Establishment
„ K. V. Kasturi Rangan	Joint Director, Finance (Budget)
„ D. Sandilya	Joint Director, Finance (Expenditure)
„ P. C. Kapur	Joint Director, Mechanical Engineering
„ S. K. Guha	Joint Director, Traffic (General) (on leave)
„ D. R. Suri	Joint Director, Traffic (General) (officiating)
„ P. H. Sarma	Joint Director, Traffic (Transportation)
„ Haveli Ram	Secretary
„ R. Srinivasan	Deputy Director, Establishment I
„ S. L. Jaini	Deputy Director, Establishment II
„ Y. T. Shah	Deputy Director, Finance (Budget)
„ M. L. Mukherjee	Deputy Director, Finance (Expenditure) I
„ Y. Krishan	Deputy Director, Finance (Expenditure) II
„ H. D. Dhir	Deputy Director, Rail Movements (Moghalsarai)
„ J. L. Dutta Gupta	Deputy Director, Rail Movements (Calcutta)
„ B. R. Kinra	Deputy Director, Railway Equipment I
„ A. Hildreth	Deputy Director, Railway Equipment II
„ G. Rama Rau	Deputy Director, Statistics (on leave)
„ V. R. Ganeshan	Deputy Director, Statistics (officiating)
„ I. C. Bhatt	Deputy Director, Tele. Communication
„ Surjan Singh	Deputy Director, Traffic (Transportation)
„ Parshotam Lal	Assistant Secretary
„ P. M. Narasimhan	Assistant Director, Establishment I
„ P. S. Doraisamy	Assistant Director, Establishment II
„ Kanwar Bahadur	Assistant Director, Establishment III
„ K. Jayaram	Assistant Director, Finance (General)
„ A. Mascarenhas	Assistant Director, Railway Equipment
„ V. Sriraman	Assistant Director, Traffic (Commercial)
„ Ram Murti Singh	Hindi Officer
„ A. C. Ahuja	Special Assistant to Chairman, Railway Board
„ Sahib Singh	Assistant Accounts Officer

Attached Officers

Shri K. L. Ghei	Officer on Special Duty (Finance)
„ P. Sahai	Officer on Special Duty (Transportation Power) I
„ J. K. Verma	Officer on Special Duty (Co-operatives)
„ S. S. Verma	Officer on Special Duty (Ganga Bridge)
„ G. C. Sen	Officer on Special Duty (Forms Standardization) (Calcutta)
„ M. V. Bhavnani	Officer on Special Duty (Study Group)
„ K. C. Bansal	Officer on Special Duty (Transportation Power) II
„ M. M. Lal	Officer on Special Duty (Transportation Power) III
„ B. S. Gidwani	Secretary, *Ad hoc* Tribunal
„ M. V. S. Sarma	Officer on Special Duty (Statistics)
„ R. L. Bose	Officer-in-Charge (Exhibition), Metre Gauge
„ S. K. Batra	Officer-in-Charge (Exhibition), Broad Gauge

Superintendents

Shri Ram Singh	Budget Branch
,, Rup Lal	Establishment I Branch
,, N. Rajagopalan	Establishment II Branch
,, P. B. Jain	Establishment III Branch
,, S. Sivaraman	Establishment IV Branch
,, Tara Chand	Establishment Special Branch (on leave)
,, G. R. Vankataraman	Establishment Special Branch (officiating)
,, R. R. Hariharan	Finance (Establishment) Branch
,, A. C. Gupta	Finance (Expenditure) I Branch (officiating)
,, D. C. Rewari	Finance (Expenditure) I Branch (on leave)
,, Suraj Prashad	Finance (Expenditure) II Branch
,, Gurumukh Singh	Finance (Special) Branch
,, Hira Lal	General Branch
,, R. N. Pershad	Mechanical Engineering Branch
,, Beli Ram	Preferential Traffic Branch
,, R. R. Bhanot	Statistics Branch
,, R. N. Datta	Railway Equipment Branch
,, A. N. Kapur	Traffic Commercial Branch
,, A. N. Sheopory	Traffic Transportation Branch
,, M. P. Haran	Works Branch (on leave)
,, C. L. Ohri	Works Branch (officiating)
,, N. L. Das Gupta	On leave preparatory to retirement

Central Standards Office

List of Officers as on 31 March 1954

Shri B. S. Sindhu	Deputy Chief Controller of Standardization In-charge
,, V. Venkataramayya	Deputy Chief Controller of Standardization (Civil)
,, N. B. Shroff	Architect
,, L. C. Mohindra	Assistant Chief Controller of Standardization (Civil-I)
,, M. Menezes	Assistant Chief Controller of Standardization (Civil-II)
,, R. Krishnamurti	Assistant Chief Controller of Standardization—Mechanical (Loco)
,, R. Rajagopalan	Assistant Chief Controller of Standardization—Mechanical (C & W)
,, B. L. Bailur	Assistant Chief Controller of Standardization—Mechanical (CB)
,, P. N. Talwar	Assistant Chief Controller of Standardization—Mechanical (S & R)
,, A. V. Srinivasan	Sectional Officer (Loco—A)
,, K. S. Krishnan	Sectional Officer (Loco—B)
,, J. S. Bhavra	Sectional Officer (E.D.O.)
,, S. S. Lal	Sectional Officer (Signals)
,, G. Pershad	Sectional Officer (C.D.O.)
,, Shanti Nath	Sectional Officer (Electrical)
,, J. N. Gupta	Inspecting Officer (Loco & Boiler)
,, Salig Ram	Inspecting Officer for Railways—Tatanagar
,, N. N. Singh	Trainee Officer
,, Lal Das	Establishment Officer

II—Research Organization

(a) Railway Testing and Research Centre, Lucknow

Shri S. L. Kumar	Director, Research
,, R. Basu Chowdhury	Deputy Director (Civil)
,, M. S. Murti	Deputy Director (Electrical)
,, M. V. Kamlani	Deputy Director (Mechanical)
,, M. N. Bery	Deputy Director (Information and Publication)
,, B. V. Mallya	Dynamometer Car Officer
,, C. P. S. Sastry	Oscillograph Car Officer (I)
,, M. B. Ramchandani	Oscillograph Car Officer (II)
,, K. G. Uppal	Assistant Director, I and P

(b) Research and Testing Sub-Centre, Lonavla

Shri A. V. D'Costa	Joint Director (Soil Research)
,, U. G. K. Rao	Deputy Director (Soil Research)

(c) Research and Testing Sub-Centre, Chittaranjan

Shri R. G. Bhatawadekar	Joint Director (M & C)
,, S. Ramanujam	Deputy Director (M & C)
,, M. N. Bhide	Assistant Metallurgist (Cl. II)
,, V. R. S. Subramanian	Trainee Officer (Jr. Scale)

III—Security Organization

Shri B. N. Lahiri	Security Adviser to the Railway Board
„ Qamarul Hasan	Assistant Security Adviser

Officers serving on Committees

I—Standards Advisory Committee

Shri P. B. Aibara	Officer on Special Duty at Secunderabad

II—Electric Traction Advisory Committee at Bombay

Shri V. Seetharaman	Secretary

III—Railway Corruption Enquiry Committee at New Delhi

Shri H. N. Trivedi	Secretary
„ Suresh Behari Saharya	Private Secretary to the Chairman

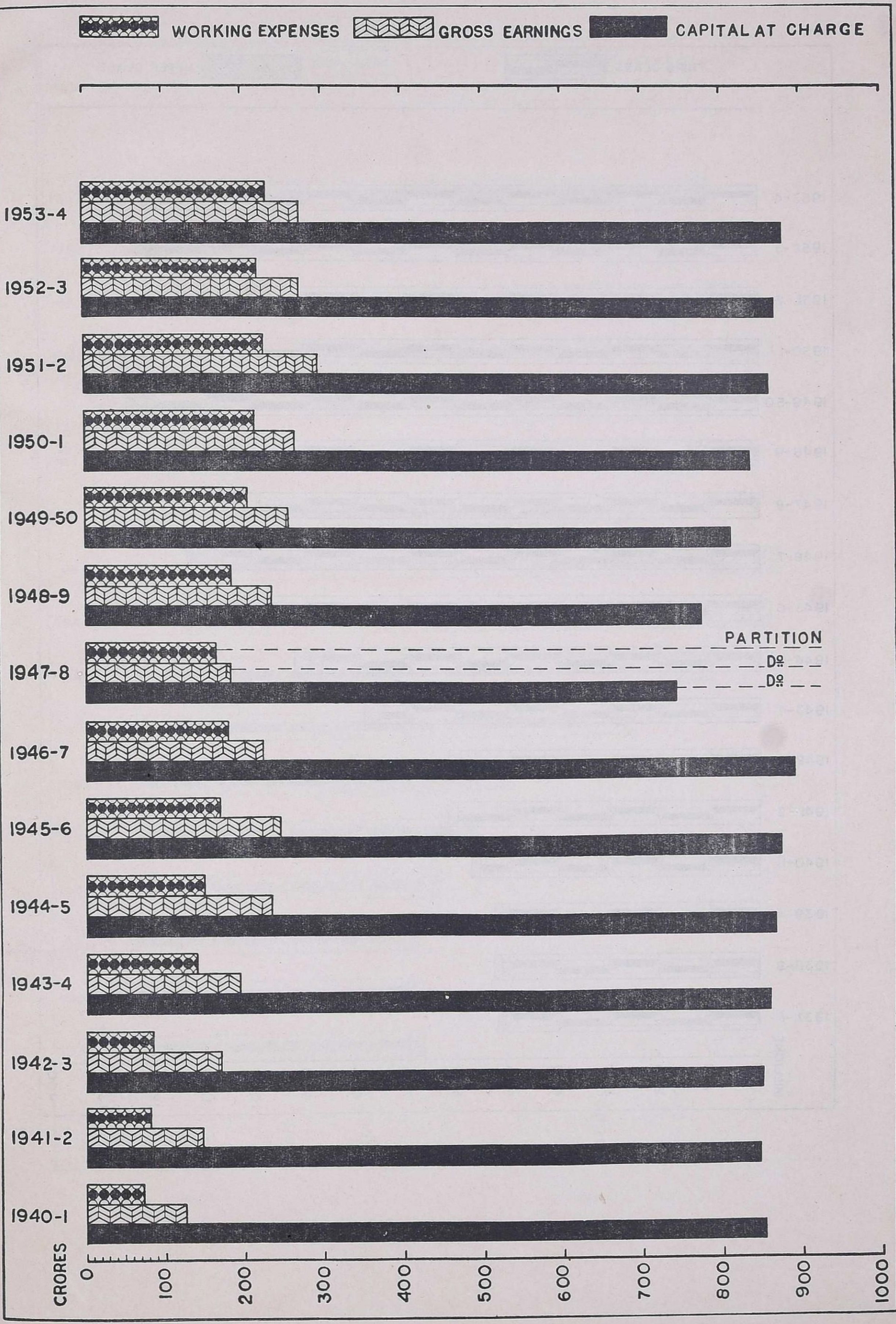
IV—Railway Accident Enquiry Committee at New Delhi

Shri T. N. Dar	Secretary

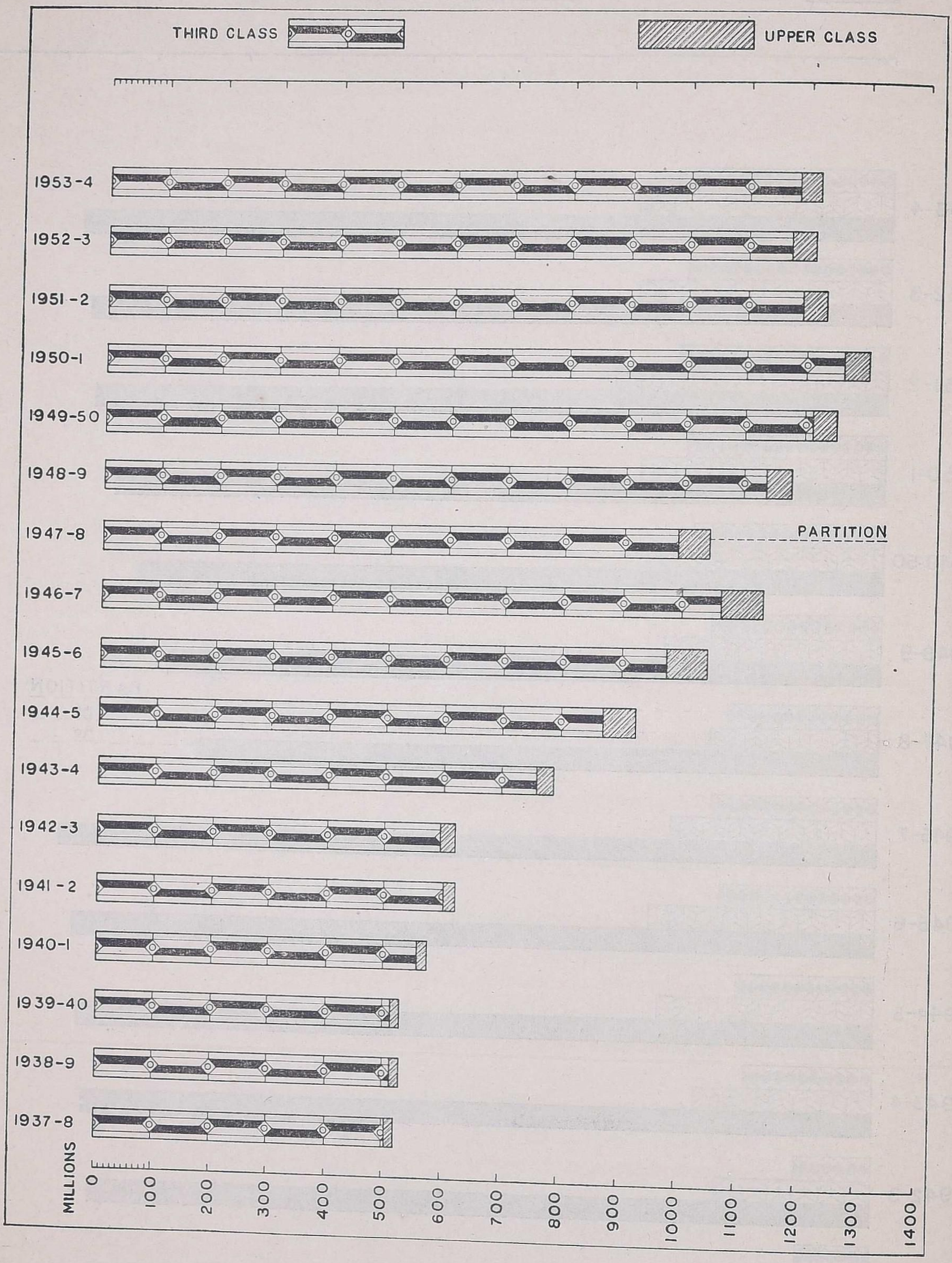
APPENDIX C

GRAPHS

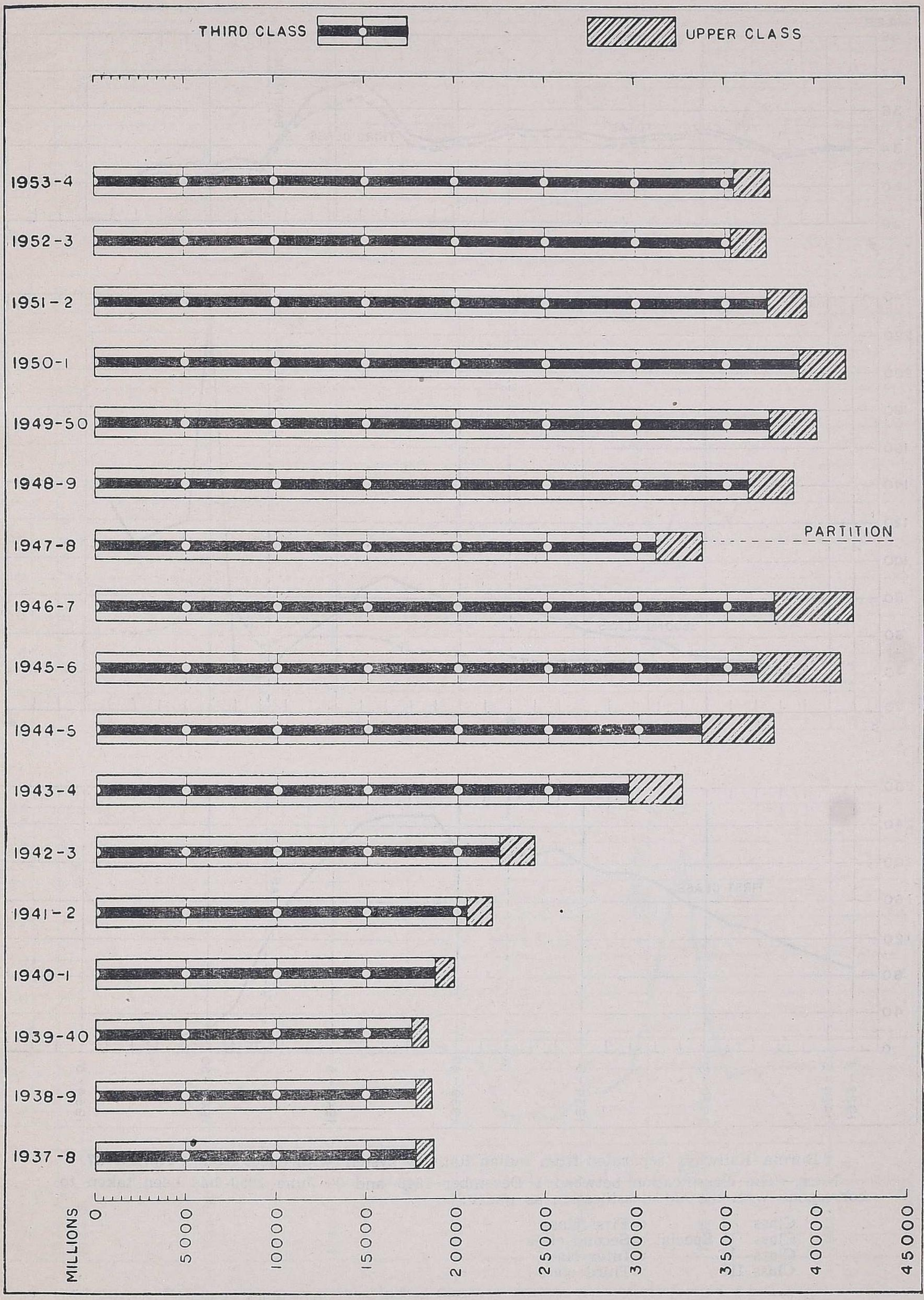
I—TOTAL CAPITAL AT CHARGE, TOTAL GROSS EARNINGS AND TOTAL WORKING EXPENSES ALL INDIAN RAILWAYS



II—NUMBER OF PASSENGERS CARRIED
ALL INDIAN RAILWAYS

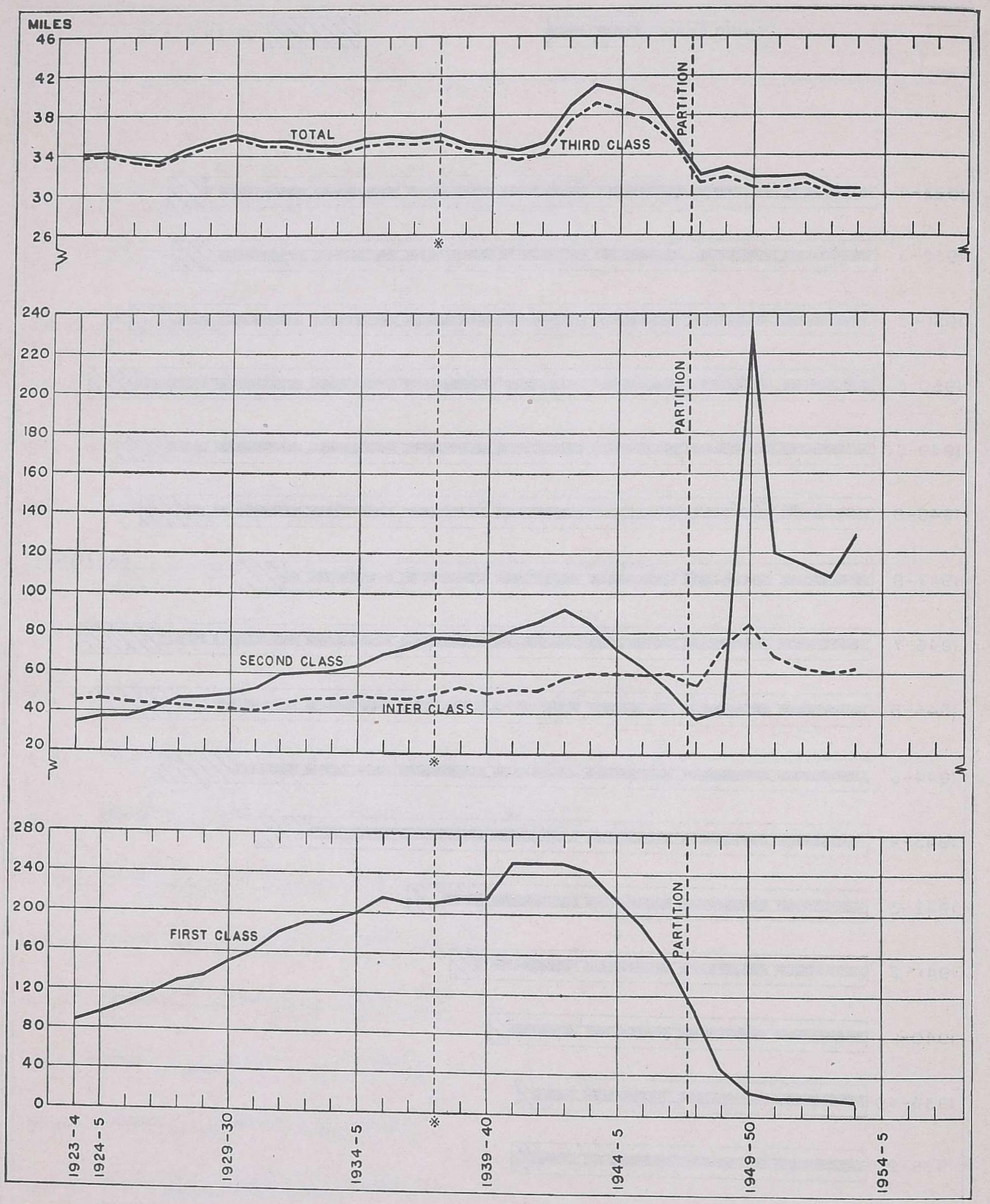


III—NUMBER OF PASSENGER MILES
ALL INDIAN RAILWAYS



IV—AVERAGE MILES A PASSENGER WAS CARRIED
(INCLUDES SUBURBAN AND NON-SUBURBAN TRAFFIC)

ALL INDIAN RAILWAYS



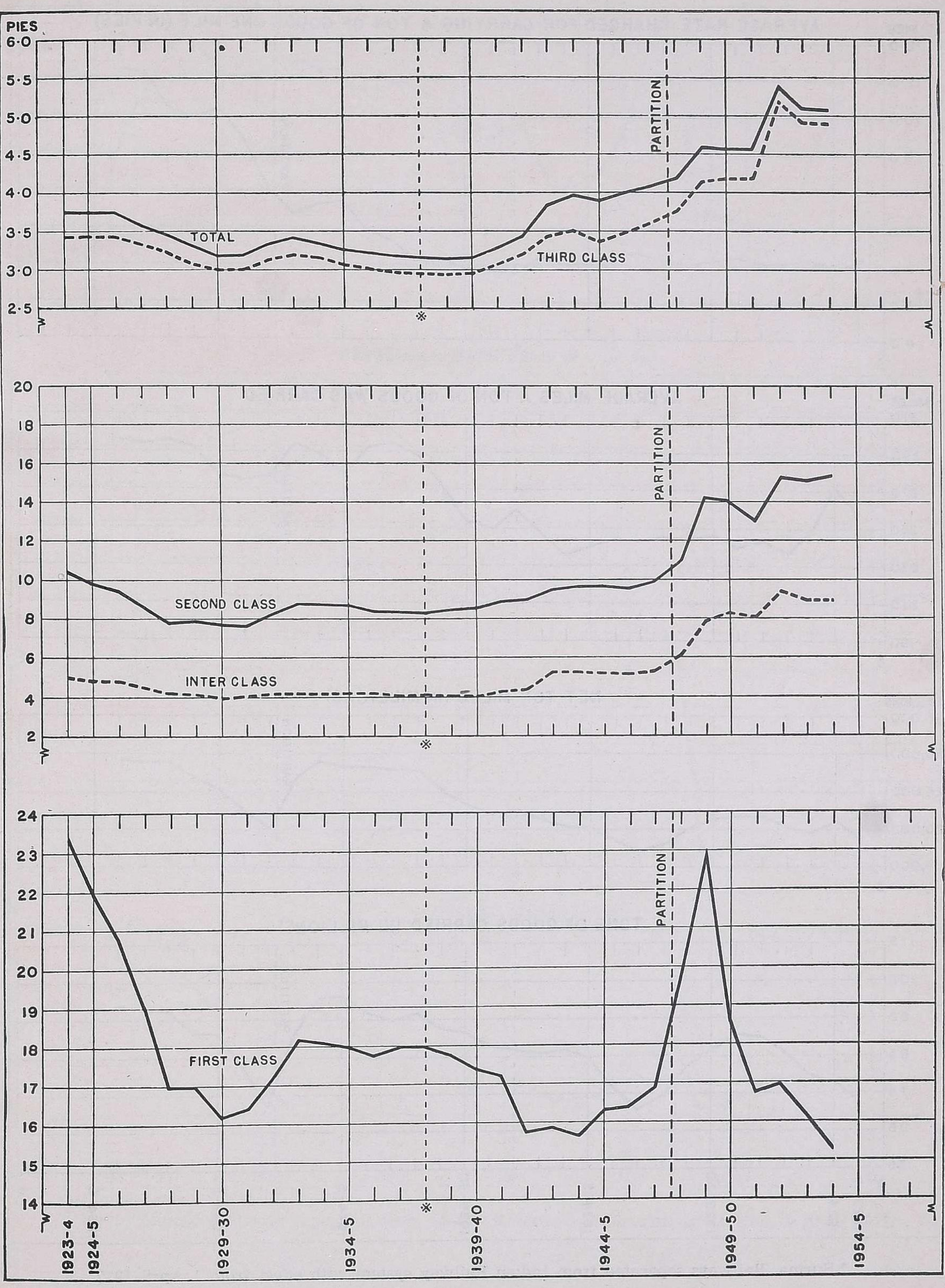
* Burma Railways separated from Indian Railway system with effect from 1 April 1937.

NOTE.—The classification between 1 December 1948 and 30 June 1950 has been taken to correspond with the old classification as under:—

Class I	=First class
Class II Special	=Second class
Class II	=Inter class
Class III	=Third class

V—AVERAGE RATE CHARGED PER PASSENGER PER MILE
(INCLUDES SUBURBAN AND NON-SUBURBAN TRAFFIC)

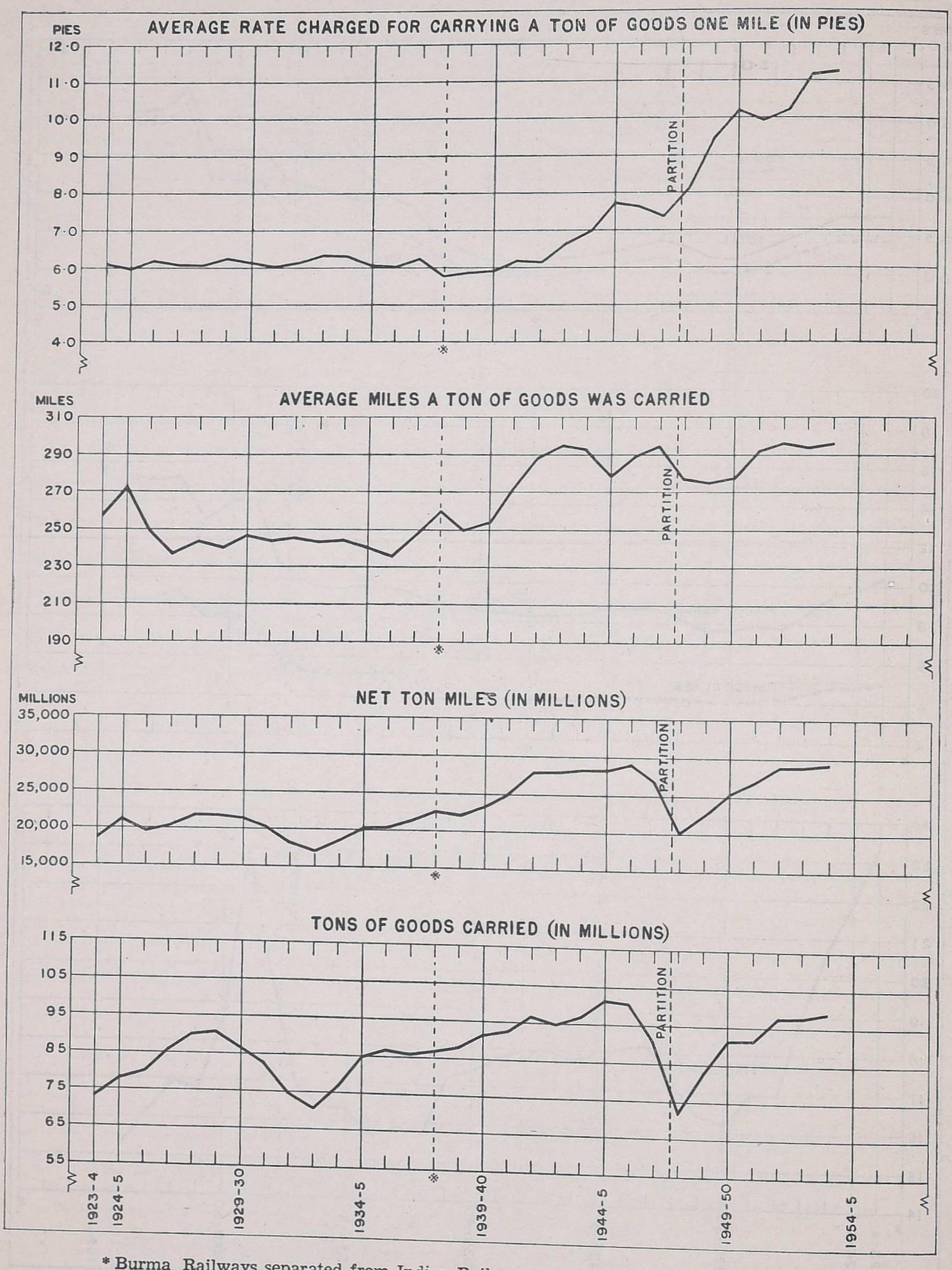
ALL INDIAN RAILWAYS



* Burma Railways separated from Indian Railway system with effect from 1 April 1937.

VI—AVERAGE RATE, AVERAGE LEAD, NET TON MILES, TONS CARRIED

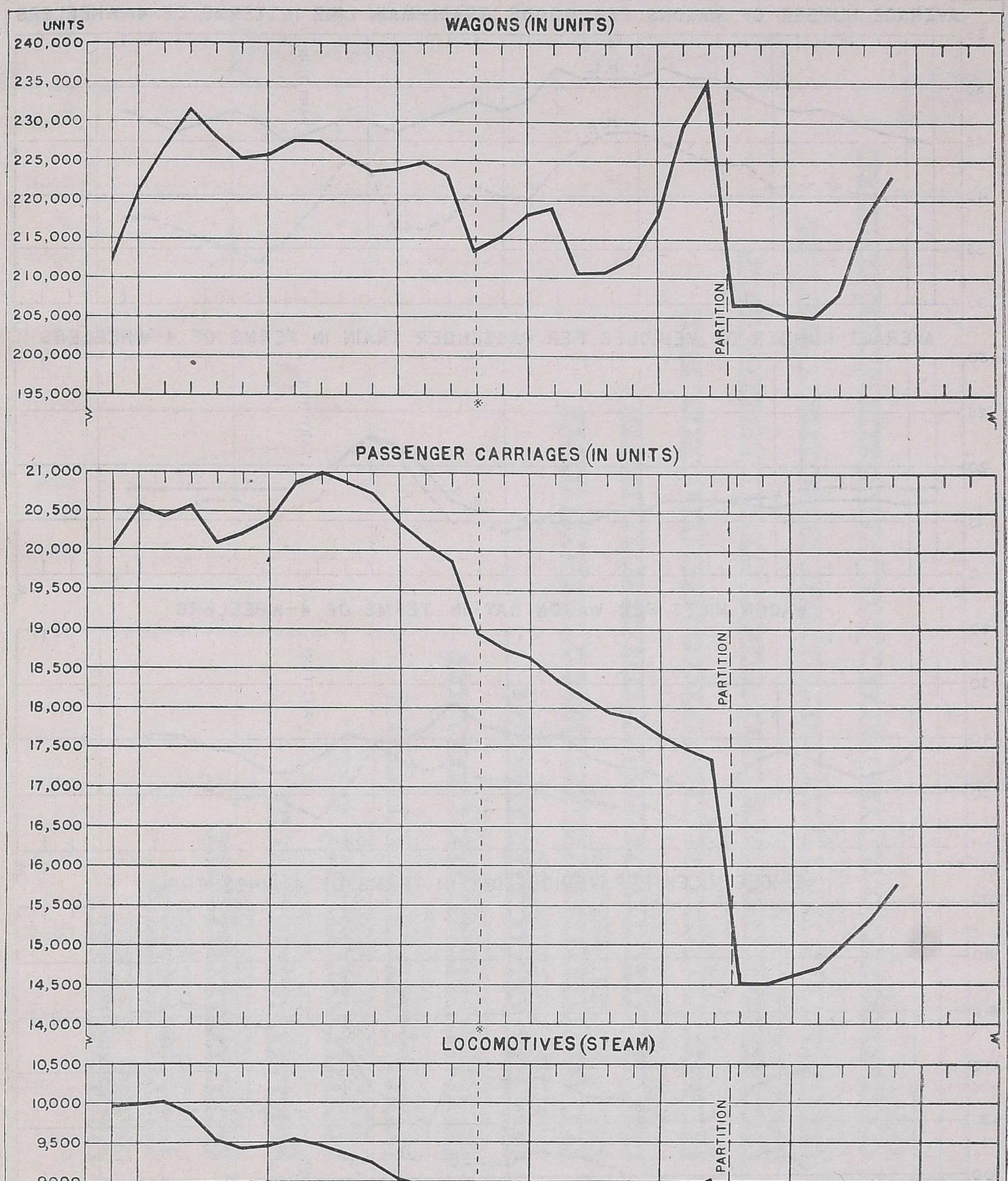
ALL INDIAN RAILWAYS



* Burma Railways separated from Indian Railway system with effect from 1 April 1937.

VII—ROLLING-STOCK IN SERVICE

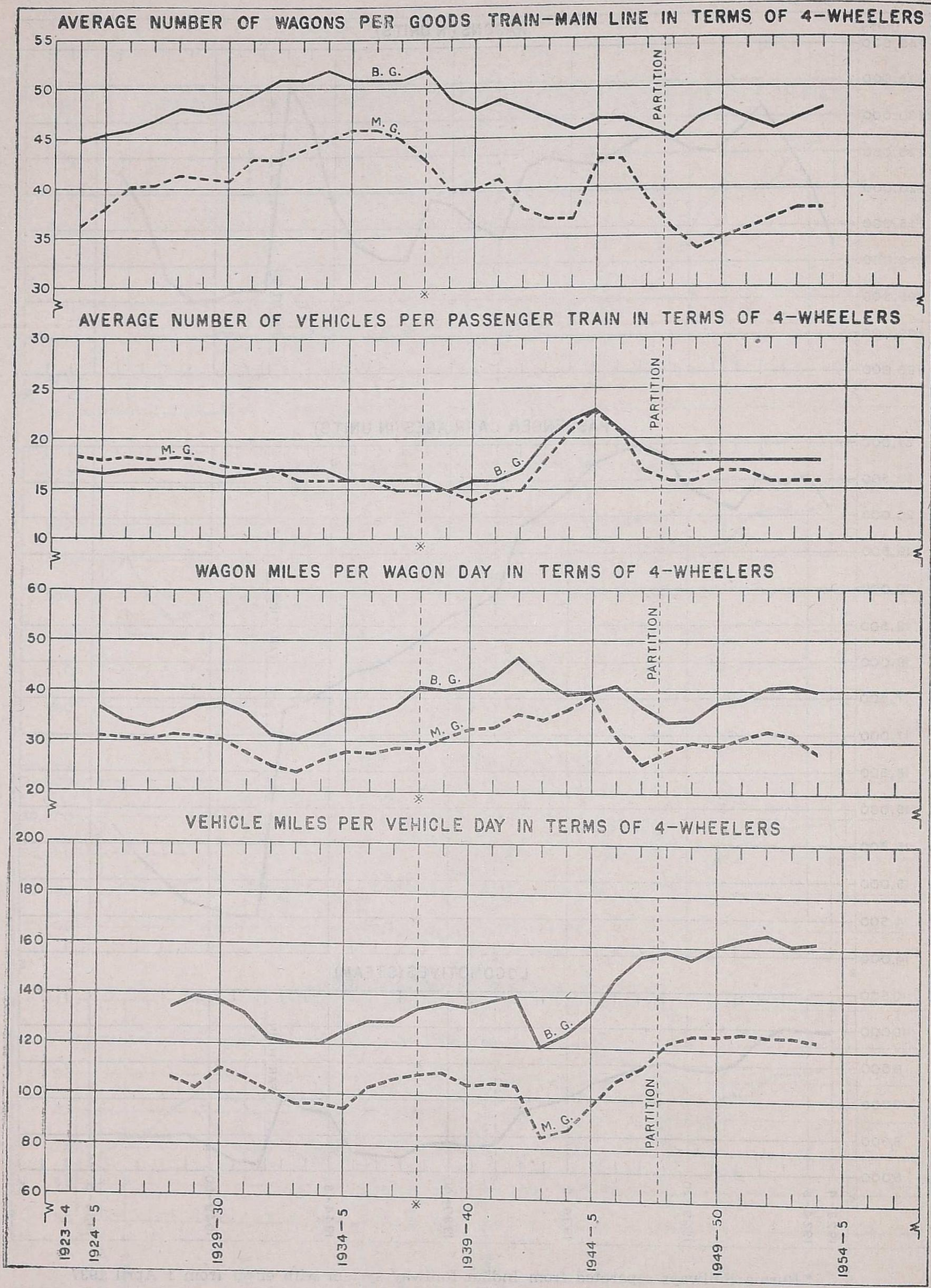
ALL INDIAN RAILWAYS



* Burma Railways separated from Indian Railway system with effect from 1 April 1937.

VIII—WAGON AND VEHICLE UTILIZATION

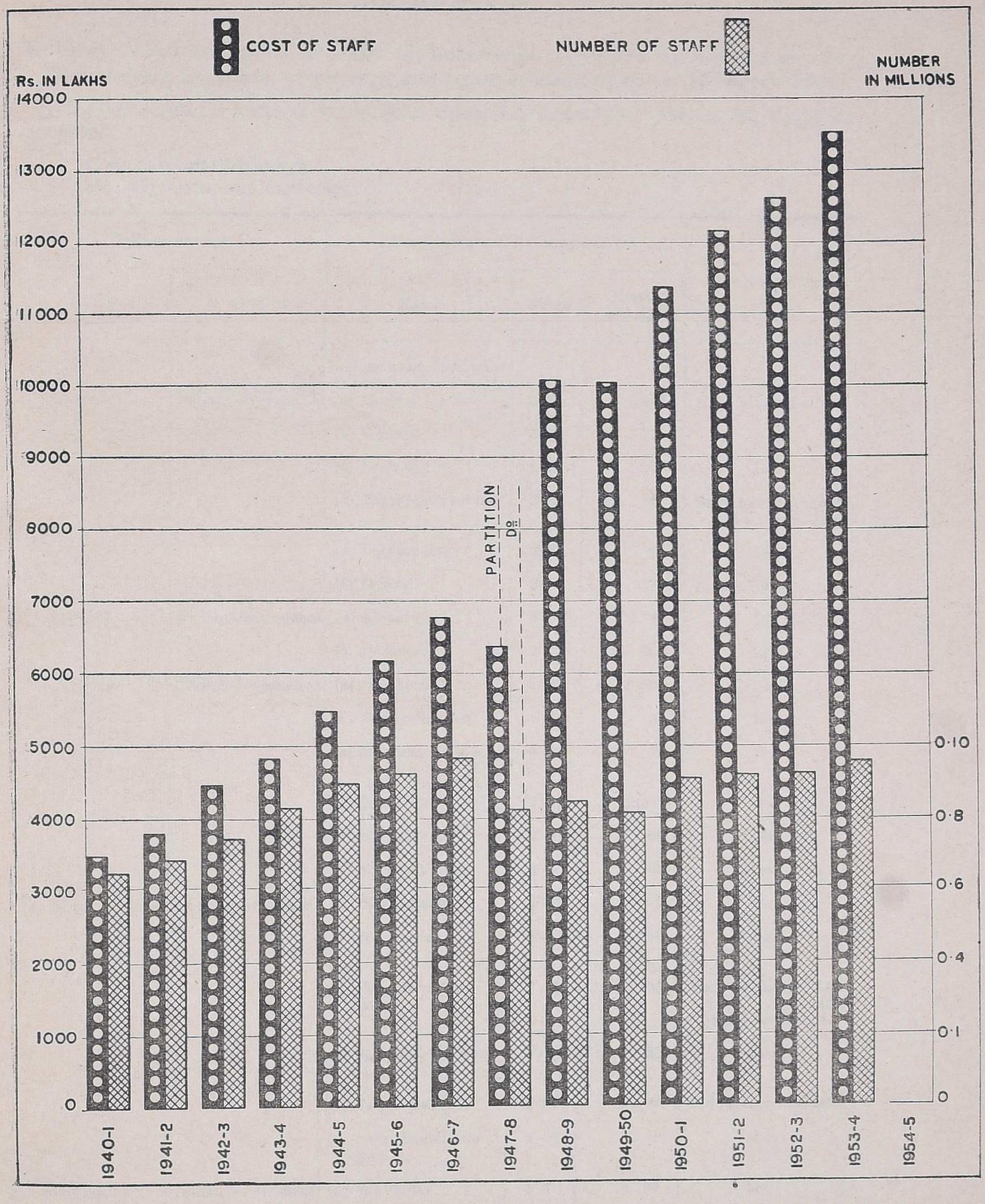
GOVERNMENT RAILWAYS



* Burma Railways separated from Indian Railway system with effect from 1 April 1937.

IX—TOTAL NUMBER AND COST OF STAFF

GOVERNMENT RAILWAYS



APPENDIX D

Railway Administrations in India alphabetically arranged by Classes showing the working agencies, ownership and route mileage open on 31 March 1954

Indian Railway systems have been classified under two classes for statistical purposes:

Government Railways
Non-Government Railways.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
		GOVERNMENT RAILWAYS			
(1) Central	Indian Government	(*a*) Central	5′-6″	4,093	Indian Government.
		(*b*) Central	3′-3⅜″	772	Do.
		(*c*) Central*	2′-6″	320	Do.
		(*d*) Ellichpur-Yeotmal	2′-6″	118	Branch Line Company under rebate terms.
		(*e*) Pulgaon-Arvi	2′-6″	22	Do.
		(*f*) Central	2′-0″	307	Indian Government.
(2) Eastern	Indian Government	(*a*) Eastern	5′-6″	4,746	Do.
		(*b*) Eastern	2′-6″	942	Do.
(3) Northern	Indian Government	(*a*) Northern	5′-6″	3,858	Do.
		(*b*) Rupar-Nangal†	5′-6″	34	Do.
		(*c*) Mukerian-Pathankot	5′-6″	26	Do.
		(*d*) Northern	3′-3⅜″	2,006	Do.
		(*e*) Kalka-Simla	2′-6″	60	Do.
		(*f*) Kangra Valley	2′-6″	68	Do.
(4) North Eastern	Indian Government	(*a*) North-Eastern‡	5′-6″	2	Do.
		(*b*) North-Eastern	3′-3⅜″	4,669	Do.
		(*c*) Chaparmukh-Silghat§	3′-3⅜″	51	Branch Line Company under guarantee terms.
		(*d*) Katakhal-Lalabazar§	3′-3⅜″	23	Do.
		(*e*) Tejpur-Balipara	2′-6″	3	Indian Government.
		(*f*) Darjeeling-Himalayan	2′-0″	51	Do.
(5) Southern	Indian Government	(*a*) Southern	5′-6″	1,758	Do.
		(*b*) Cochin Harbour Extension	5′-6″	4	Cochin Harbour Authority.
		(*c*) Tenali-Repalle	5′-6″	21	District Board, Guntur.
		(*d*) Southern	3′-3⅜″	4,064	Indian Government.
		(*e*) Alnavar-Dandeli (Provincial)	3′-3⅜″	19	Government of Bombay.

* Includes *ex*-Barsi Light Railway purchased and integrated with the Central Railway on 1 January 1954.

† Jointly owned by the Government of India and the Government of Punjab.

‡ This line is laid between Haldibari and Pakistan Border for direct communication with Pakistan.

§ This line is guaranteed by the Government of India and also received a subsidy from the Assam Government for the first ten years.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
(5) Southern—*contd.*	Indian Government	(*f*) West of India Portuguese	3′-3⅜″	51	West of India Portuguese Railway Company.
		(*g*) Peralam-Karaikkal	3′-3⅜″	15	French Government.
		(*h*) Pondicherry	3′-3⅜″	8	Pondicherry Railway Company.
		(*i*) Nanjangud Town-Chamarajanagar	3′-3⅜″	22	District Boards, Mysore and Mandya.
		(*j*) Southern	2′-6″	96	Indian Government.
(6) Western	Indian Government	(*a*) Western	5′-6″	1,289	Do.
		(*b*) Western	3′-3⅜″	3,558	Do.
		(*c*) Western	2′-6″	774	Do.
		NON-GOVERNMENT RAILWAYS			
(1) Ahmadpur-Katwa	Ahmadpur-Katwa Railway Co.	Ahmadpur-Katwa*	2′-6″	32	Branch Line Company under Guarantee terms.
(2) Arrah-Sasaram Light	Arrah-Sasaram Light Railway Co.	Arrah-Sasaram Light	2′-6″	65	Company subsidized by District Board of Shahabad.
(3) Bankura-Damodar River	Bankura-Damodar River Railway Co.	Bankura-Damodar River*	2′-6″	60	Branch Line Company under guarantee terms.
(4) Barasat-Basirhat Light	Barasat-Basirhat Light Railway Co.	Barasat-Basirhat Light	2′-6″	52	Company subsidized by District Board of 24-Parganas.
(5) Bengal Provincial	Bengal Provincial Railway Co.	(*a*) Bengal Provincial (*b*) Dasghara-Jamalpurganj*	2′-6″ 2′-6″	33 8	Unassisted Company. Branch Line Company under guarantee terms.
(6) Bukhtiarpur-Bihar Light	District Board, Patna	Bukhtiarpur-Bihar Light	2′-6″	33	District Board of Patna.
(7) Burdwan-Katwa	Burdwan-Katwa Railway Co.	Burdwan-Katwa*	2′-6″	32	Branch Line Company under guarantee terms.
(8) Dehri-Rohtas Light	Dehri-Rohtas Light Railway Co.	Dehri-Rohtas Light	2′-6″	24	Company subsidized by District Board of Shahabad.
(9) Futwah-Islampur	Futwah-Islampur Light Railway Co.	Futwah-Islampur*	2′-6″	27	Branch Line Company under guarantee terms.
(10) Howrah-Amta Light	Howrah-Amta Light Railway Co.	Howrah-Amta Light	2′-0″	44	Company subsidized by District Boards of Howrah and Hooghly and Municipality of Howrah.
(11) Howrah-Sheakhala Light	Howrah-Sheakhala Light Railway Co.	Howrah-Sheakhala Light	2′-0″	20	Do.
(12) Jagadhri Light	Jagadhri Light Railway Co.	Jagadhri Light	2′-0″	3	Unassisted Company.
(13) Kalighat-Falta	Kalighat-Falta Railway Co.	Kalighat-Falta*	2′-6″	26	Branch Line Company under guarantee terms.
(14) Shahdara (Delhi) Saharanpur Light	Shahdara (Delhi) Saharanpur Light Railway Co.	Shahdara (Delhi) Saharanpur Light†	2′-6″	93	Company subsidized by the Government of India.

* Guaranteed by the Government of India.

† Received land only from Government.

APPENDIX E

Principal Statistics of Railway Working in Selected Foreign Countries

British Railways, 1953*

Capital†	£1,476,325,423
Route mileage	19,222
Total Gross Receipts	£421,390,985
Working expenses	£386,330,175
Net traffic receipts	£35,060,810
Operating ratio	92
Passenger journeys originating (in thousands)	985,299
Passenger miles estimated (millions)	20,810
Passenger earnings (in thousands)	£114,690
Freight train traffic originating tons (in thousands)	289,271
Net ton miles (in thousands)	22,766,194
Freight earnings (in thousands)	£263,083
Train miles—	
Coaching (in thousands)	237,599
Freight (in thousands)	141,567
Number of employees at end of year (including collection and delivery services)	593,768

* *British Transport Commission Financial and Statistical Accounts, 1953*
† Capital represents the gross book value of rolling-stock, vehicles, plant and equipment, lands, buildings, permanent way, etc.

U. S. Class I Railways, 1953*

Investment in railway property used in transportation service (in thousands)	$32,166,431
Route miles†	225,232
Total operating revenue (in thousands)	$10,664,169
Total operating expenses (in thousands)	$8,135,228
Operating ratio	76·29
Revenue passengers carried (in thousands)	456,817
Revenue passenger miles (in thousands)	31,655,132
Passenger revenue (in thousands)	$841,962
Revenue tons originated‡ (in thousands)	1,384,301
Revenue ton miles ‡(in thousands)	605,813,437
Freight revenue (in thousands)	$8,950,522
Train miles—	
Passenger (in thousands)	333,128
Freight (in thousands)	492,409
Number of employees (in thousands)	1,206

* *Statistics of Railways of Class I, United States, calendar years 1939 to 1953 Statistical summary No. 38, August 1954, Association of American Rail Roads, Bureau of Railway Economics.*
† Average miles represented by income account.
‡ Short tons of 2,000 lbs.

Canadian Railways, 1953

	Canadian National Railways*	Canadian Pacific Railways†
Capital‡	$2,561,747,265	$1,610,001,777
Average mileage of road operated	24,153	17,018
Total operating revenues	$696,622,451	$470,571,371
Total operating expenses	$659,049,086	$441,686,799
Net operating revenues	$37,573,365	$28,884,572
Operating ratio	94·61	93·9
Passengers carried (Revenue)	18,080,958	9,426,934
Passenger miles (Revenue)	1,538,832,219	1,321,004,000
Passenger revenue	$45,916,272	$37,210,362
Tons carried (Revenue)	86,523,327	59,256,634
Net ton miles of freight (Revenue)	36,677,980,252	27,455,728,000
Freight revenue	$553,618,614	$389,443,857
Train miles—		
Passenger service	24,949,141	20,640,801
Freight service	46,883,109	36,069,614
Number of employees	Not available	95,211

* *Annual Report, Canadian National Railways, 1953.*
† *Canadian Pacific Railway Company Annual Report, 1953.*
‡ Represents Property Investment account at the end of the year 1953.

SOUTH AFRICAN RAILWAYS, 1952-3*

Total capital expenditure	£317,656,405
Mileage of open lines as at 31 March 1953	13,400
Total earnings	£102,488,624
Total working expenditure (including depreciation)	£72,461,369
Surplus of earnings over gross working expenditure	£30,027,255
Operating ratio	70·70
Passenger journeys	268,743,474
Earnings—Passenger	15,823,705
Total tonnage† of revenue-earning traffic	60,341,269
Earnings—Goods, coal and live-stock	£77,227,423
Total train miles run	88,679,564
Total staff at 31 March 1953	197,417

**Report of the General Manager of Railways and Harbours for the year ended 31 March 1953.*

† Short ton of 2,000 lbs.

AUSTRALIAN RAILWAYS

——	New South Wales Railways 1952-3*	Victorian Railways 1952-3*	Queensland Railways† 1953-4 (a)	Western Australian Government Railways 1953-4 (a)
Capital (Open lines)	£213,084,073	£82,034,128‡	£66,474,589	£38,360,642
Miles open	6,113	4,660	6,491	4,111
Earnings	£72,675,775	£31,866,776	£29,428,390	£11,374,307
Working expenses	£66,451,995	£34,007,877‖	£28,476,265	£13,756,109
Net earnings	£6,223,780	£—2,141,101	£952,125	£—2,381,802
Operating ratio	91·44	106·72	96·76	120·95
Passenger journeys	271,698,493	162,856,992	35,730,457	8,678,083
Passenger miles	Not available	1,805,506,092	Not available	135,840,554
Passenger revenue	£23,947,820§	£9,371,021	£3,242,477	£882,841
Tonnage of goods and live-stock (Paying)	17,876,515¶	9,191,615	7,849,509	3,205,958
No. of tons carried one mile (Paying)	Not available	1,262,453,564	1,355,947,620	537,798,882
Total goods revenue (including live-stock)	£48,727,955	£19,380,471	£24,217,445	£9,308,162
Train mileage—				
Passenger	21,661,408	11,932,758	6,818,730	2,201,125
Goods	13,837,492	5,757,458	10,241,538	4,944,449
No. of staff	57,348	28,424	28,005	13,465

* *Annual Report for the year ended 30 June 1953.*

† Exclusive of Uniform Gauge Railway.

‡ Capital reduced by £25,594,906, Railway (Finance Adjustment) Act 1936.

‖ Exclusive of £92,911 charged to Long Service Leave Reserve.

¶ Does not include live-stock tonnage.

§ Represents earnings from coaching, rents &c.

(a) *Annual Report for the year ended 30 June 1954.*

Books and Technical Papers published by the Railway Board

BOOK

(1) Report by the Railway Board on Indian Railways. Published yearly. Price: Volume I—Report, Rs. 7 or 11*sh.* Volume II—Statistics, Rs. 12-2-0 or 19*sh.* (1952-3).

(2) Indian Railways, 1952-3. Published yearly. Price: Rs. 2-0-0.

(3) Classified List of Gazetted Establishment of Indian Railways corrected up to 31 December 1954. Rs. 9-10-0 or 15*sh.* 6*d.*

(4) History of Indian Railways, constructed and in progress corrected up to 31 March 1951. Published sexennially. Price: Rs. 10-6-0 or 16*sh.* 6*d.*

TECHNICAL PAPERS

(5) Over 330 papers have been published by the Technical Section of the Railway Board's Office. The papers comprise:

(*a*) Original descriptions of railway works and studies of railway problems in India and elsewhere
(*b*) Reprints of articles from foreign engineering magazines
(*c*) Reprints or abstracts of reports received by the Government of India on subjects connected with railways

A complete list of the papers can be obtained *gratis* by Railways from the Director Research, Railway Testing and Research Centre, Alambagh, Lucknow. A few of the more important Technical papers are mentioned below:—

Technical Paper	*Name*	*Author*
No. 72.	The design of well foundation for bridges	(Compiled.)
„ 148.	Statistics of Railway working expenditure	G. DEUCHARS
„ 153.	River training and control on the guide bank system	F. J. E. SPRING
„ 215.	The Hardinge Bridge over the Ganges Lower at Sara	SIR ROBERT GALES
„ 219.	Technical education in relation to railways in America	H. L COLE
„ 239.	The Central Control systems for the scheduling of operations in locomotive repairs workshops in England	H. H. SAUNDERS
„ 242.	Railway Statistics and the Operating Officer	MAJOR F. H. BUDDEN
„ 243.	How to judge the prospects of new railways	LT.-COL. L. E. HOPKINS
„ 244.	Sleeper spacing and the effect of the new Permissible Axle-loads	A. F. HARVEY
„ 245.	Report of the Indian Railway Bridge Committee on track stresses	
„ 247.	1st and 2nd interim reports of the Indian Railway Bridge Committee on Impact and Revision of the Bridge rules	
„ 249.	Operating Statistics and the Divisional Officer	MAJOR F. H. BUDDEN
„ 250.	Axle-loads, Wheel Diameter and railheads dimensions	
„ 251.	A. R. E. and maintenance of Way Association's Impact tests on Railway Bridges	(Reprinted.)
	Description of the Planning, Progress, Coaling and Engine Repairs, Schedule System introduced to the G. I. P. Railway Loco. Shops at Parel	F. G. S. MARTIN
„ 256.	Notes on the preparation of railway projects	H. L. GLASS
„ 259.	The estimation of Passenger earnings on new projects	A. LINES
„ 261.	Tube wells on the N. W. Railway, 1925	J. WARDON
„ 262.	Note on steps to be taken to permit of running the future large vehicles on Broad Gauge Railways, 1927	A. I. SLIEGH
„ 263.	Note on composite index numbers of Indian Railways	W. G. BARNETT
„ 264.	Memorandum on Traffic Surveys	R. N. NICOLLS
„ 266.	Principle of the Absolute Block System, 1929	L. H. KIRKNESS
„ 267.	Flood Lighting, 1929	H. J. MULLENEUX
„ 271.	Antiseptic treatment of Pinus Longifolia (Chir) for Railway Sleepers	KAMESAM
„ 272.	The Stereographic Survey of the Shakagam	MAJOR KENNETH MASON (Reprint)
„ 273.	A Schedule system for the Control of Operations in Workshops, 1929	H. H. SAUNDERS
„ 275.	An Enquiry into the Preparation of Periodic Financial Returns on the Railways of Great Britain, Egypt, and Palestine, 1929	MAJOR WAGSTAFF
„ 276.	Investigation into the Strength of Rail joints	H. HOWE AND L. H. SWAIN

Technical Paper	Name	Author
No. 277.	Description of the Cost Accounting Scheme introduced in the Locomotive Workshops at Moghalpura	A. E. HOWELL
„ 278.	Notes on Tube Railway Construction	H. G. SALMOND
„ 279.	Reports on Track Practice on American and Canadian Railways	A. F. HARVEY
„ 280.	The Installation of a Production system in the Locomotive Workshops at Moghalpura	A. E. HOWELL
„ 281.	The Belt System of Repairs introduced in the Loco. Workshops at Kancharapara	R. DE VERAIRWIN AND J. R. POTTER
„ 282.	Note on "Fridera" a composition for reconditioning abraised spike holes in Railway Sleepers	S. KRISHNA AND T. P. GHOSE
„ 283.	Description of a system introduced in the Stores Department of E. I. Railway with appendices	F. G. S. MARTIN AND A. R. A. HRAE DUKE
„ 284.	Notes on progressive system of wagon repairs as introduced in N. W. R. shops at Moghalpura	B. S. SINDHU
„ 285.	Notes on the methods by which the provisions in the English Railways Act of 1921 were framed both from the points of view of the Railway Coys. and of Work—the compilers of the Act	E. A. SIMS
„ 286.	Stresses in Fishplates for 90 lbs. Rails (with conclusions affecting the design of standard rail and fishplate sections)	E. A. SIMS
„ 287.	Report on Oil Burners and Wicks for Signal Lamps	H. E. COX
„ 288.	G. I. P. Railway Dynamometer Car, Report No. 11, Train Resistance	C. W. CLARKE
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